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No. 43

## Antibiotics Control Powdery Mildew in Greenhouse Tests

Two New Materials  
Protect Snap Beans  
In USDA Experiments

WASHINGTON—Two new antibiotics—Anisomycin and Griseofulvin—effectively controlled the fungus disease, powdery mildew, of snap beans in greenhouse tests at Beltsville, Md., the U.S. Department of Agriculture reports.

Anisomycin, applied to bean plants in a water spray at a rate of 50 parts of the antibiotic to a million parts of water, protected healthy bean plants from powdery mildew and also eradicated the fungus from infected plants, USDA said.

Griseofulvin was almost as effective. A water suspension of 100 parts per million of this antibiotic, sprayed on healthy bean plants, prevented powdery mildew. To eradicate the disease from infected plants required a spray containing 200 parts per million of Griseofulvin.

A single treatment with either of these antibiotics proved as effective as two or three treatments at two-day intervals.

Five other antibiotics tested on stringless green refugee beans against the powdery-mildew fungus (*Erysiphe polygoni*) proved ineffective in the

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## New Stauffer Plant Opens in Arizona

GLENDAL, ARIZ.—Stauffer Chemical Co. has opened a new agricultural chemicals plant here. The facility will employ about 25 persons, according to Phil Hall, Arizona division manager for Stauffer.

## Drift Problems Get Attention At Annual Meeting of Western Agricultural Chemicals Assn.

SAN MATEO, CAL.—Problems of chemical drift provided one of the themes for the annual meeting of the Western Agricultural Chemicals Assn., held at the Villa Hotel here Oct. 9.

Although the agricultural chemicals industry has been performing valuable services to the western farmer, the biggest "but" is the disturbing problem of drift of insecticides following application to fields, some 200 delegates were told.

Allen Mather, as the farmers' representative in his official position of executive secretary of the Agricultural Council of California, cited this complaint as leading all others—even if the farmer was willing to accept the industry as a whole as an ally.

Chemical drift has been responsible for destroying beneficial predators

## Quality Control, New Developments in Granulation and Ammoniation Stressed At Fertilizer Industry Round Table

By LAWRENCE A. LONG  
Editor of Croplife

WASHINGTON—Strong emphasis was laid on the need for quality control and for the use of modern laboratory and manufacturing techniques for making plant food during the two-day Fertilizer Industry Round Table held at the Shoreham Hotel here Oct. 16-18.

The round table, an annual event under the general direction of Dr. Vincent Sauchelli, Davison

Chemical Co., division of W. R. Grace & Co., Baltimore, Md., attracted nearly 300 persons representing many segments of the industry and its suppliers.

The changing technology and new developments in granulation and ammoniation of fertilizer materials occupied prominent spots in the program. Elmer C. Perrine, Nitrogen Division, Allied Chemical & Dye Corp., New York, presented a paper on recent developments in granulation and ammoniation, pointing out

that the trends in farming and the demands of consumers have increased the problems of fertilizer manufacturing. Meeting these demands has resulted in better products, but at the same time, has created further problems in the trade, he said.

The limitations of application equipment, presently available, were one of the factors mentioned by the speaker. However, he predicted that "as fertilizer is improved further, the limitations of application equipment will be brought more into light, and some relief from the troubles over condition of fertilizer may be forthcoming from this angle."

Beyond a certain perfection of a product, further improvements in the end results are often more economically achieved through improved means of use, it was indicated by Mr. Perrine. Using granulation as a means of solving all of the problems of applying fertilizer may prove to be costly, however, he said.

"Some practices that had their origin in local usages are being rather widely adopted in the industry," he said. "For instance, at present prices, it is economically justifiable in some cases to add to a thousand pounds of normal superphosphate as much as 30 lb. ammonia, through nitrogen solutions, beyond the point of 100% retention, knowing that only some 20 of these additional 30 lb. will be retained by the normal superphosphate. This calculated loss is fairly predictable and is sometimes referred to as excess ammoniation. It is quite frequently practiced in rotary batch mixers."

Mr. Perrine also reported that some operators are doing this in rotary batch and in continuous am-

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## Solutions Association Expands to Include Liquid Complete Fertilizer Companies

By PAUL A. ANDERSON  
Croplife Editorial Staff

SIoux CITY, IOWA — A new name, the National Fertilizer Solutions Assn., was approved by members of the former National Nitrogen Solutions Assn. during their annual meeting here Oct. 15-17. The step unites the nitrogen solutions association and a group of liquid complete fertilizer producers.

Named president of the association was E. E. Crouse, CDK Liquid Fertilizer Corp., Liberty, Ind. Other officers elected are Don Foster, Don Foster Nitrogen Solutions, Ottawa, Ohio, vice president; William B. Parrish, secretary, and John White, Auburn (Neb.) Fertilizer Co., treasurer.

Considerable emphasis was placed by speakers on merchandising, and such points as effective use of adver-

tising, building customer confidence and sales and promotion of liquid fertilizers were given a close examination during the meeting.

Over 300 persons registered as the sessions opened at the Sioux City auditorium.

An opening day speaker, John D. Waugh, director of advertising Nitrogen Division, Allied Chemical & Dye Corp., told the delegates to "be consistent in your advertising. When you find a good thing, do it over and over again. And if you as dealers don't act locally, it is impossible for your producer—regardless of his promotional efforts—to stay in business," he continued.

"Only one advertisement is a waste of money," Mr. Waugh said.

In pursuing the theme of consistency in his talk, "Effective Use of Advertising," Mr. Waugh explained that "It's important to choose one name in promoting your firm and that name should be used big and bold over and over again. A consistent program of this type will 'burn in' the name you choose," he said.

The rate of growth in the liquid mixed fertilizer field has been one of the major fertilizer developments.

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## Wholesalers Have \$280 Million in Sales, Census Says

WASHINGTON — There were 507 wholesale fertilizer and agricultural chemical distributors with total sales of \$280,597,000 in the U.S. in 1954, according to a preliminary report from the Bureau of the Census.

By comparison, 1,067 feed wholesalers did \$766,302,000 in sales and 641 seed wholesalers had sales of \$474,148,000.

The fertilizer and farm chemical distributors had inventories at the end of the year of \$15,851,000 (at cost); operating expenses for the year of \$30,585,000; a yearly payroll of \$13,627,000, and had 3,360 paid employees for the workweek ended nearest Nov. 15, 1954.

In total, there were 2,347 farm supply wholesalers with sales of \$1,574,642 in 1954, according to the census report.

and parasites of harmful insects, Mr. Mather said, and thus contributing to the spread of these pests. Some farmers seem particularly disturbed about air application of insecticides.

In defense of the industry which he represented, Henry C. Moore, president of the Agricultural Aircraft Association, Inc., thought a partial answer at least could be found in the manner in which the pesticides were processed.

Dusts present a greater problem as regards drift and other matters than do sprays, Mr. Moore said, and "we much prefer to spray than to dust."

Dusts have a propensity to drift, and thus their hours of application must be restricted to the early morning or evening to avoid rising air

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## Leave Transportation Problems to Experts, Chemical Salesmen Advised

NEW YORK—The handling of transportation problems should be left to experts, the general traffic manager of Union Carbide & Carbon Corp., New York, told the Salesmen's Association of the American Chemical Industry Oct. 15.

Speaking before the fifth annual Chemical Sales Clinic at the Hotel Commodore, C. H. Beard advised the chemical salesmen to learn all they can about the subject, but warned them not to be traffic managers themselves.

Mr. Beard pointed out that the traffic department tries to serve the sales department "in broadening markets for manufactured products and in extending competitive penetration." It, therefore, must perform "many so-called routine duties and some that are not so routine," he said.

Even in such a routine job as providing transportation rates, he noted, "there are many instances of highly complicated tariffs or rate schedules, requiring an experienced traffic man to interpret them."

But, he continued, this is only the beginning, adding that other decisions involve the choice of route and method of transportation. Also, he said, a follow-up check should be made to see whether the shipment has been entirely satisfactory to the customer, and this might concern such things as overcharges and claims for damage.

Mr. Beard urged the chemical salesmen to refer terms and conditions in sales contracts to the traffic manager to find out whether he can operate under them without difficulty.

He cited a relatively new function of the traffic department—the making of distribution studies.

"Here," he said, "the traffic manager may readily develop from reports he has received from plants or accounting departments, that the company is serving certain markets from the wrong plant, insofar as transportation economics and service is concerned."

If chemical salesmen would learn how to think and talk from the viewpoint of their individual customers, then they would be confronted with fewer sales obstacles.

This view was voiced by J. Douglas Kirk of the Sales Analysis Institute of Illinois in an address before the clinic.

Mr. Kirk felt that among the things that stand in the way of sales are customer habits, fear, price, competition, lack of information and difficult personalities.

"To overcome customers' habits," he told the chemical salesmen, "you must show them how their conditions

can be sufficiently improved by your idea.

"To overcome fear, you must give them enough technical data and evidence (experience of others) to convince them that their fears are unfounded.

"To overcome price you must educate your customer to appreciate that the benefits of your idea, both tangible and intangible, are worth the extra money.

"To overcome competition requires the planned use of actions and works which will establish friendship and favorable attention and then follow up with reasons why your idea will further improve the customer's conditions.

"To handle the difficult personality demands an attitude of tolerance on your part, control of your own emotions and then convincing presentations which show the difficult person how his objectives in life or on his job will be easier to reach with your idea."

Werner C. Brown, director of sales for the cellulose products department of Hercules Powder Co., Wilmington, Del., urged salesmen to plan ahead to achieve maximum efficiency. Only through conscious planning, he declared, can a salesman make fullest use of his most valuable asset—time.

Francis J. Curtis, Monsanto Chemical Co., St. Louis, spoke on a "Blueprint for Personal Development," and Carter L. Burgess, assistant secretary of defense, was luncheon speaker.

Officers of the Salesmen's Association of the American Chemical Industry are E. L. Collins, Chilean Nitrate Corp., president; Vincent L. Rebak, Grace Chemical Co., vice president; Robert J. Roberts, Emery Industries, Inc., treasurer, and James E. Spencer, Harshaw Chemical Co., secretary.

### Adrian J. Stewart In New Atlas Post

WILMINGTON—Atlas Powder Company has announced that Adrian J. Stewart, technical representative in charge of the company's chemicals sales office in Atlanta, has been transferred to its international chemical sales department in Wilmington. Succeeding him in Atlanta is Robert L. Herrman, Jr., formerly in the company's product development department here.

### JOINS SPROUT-WALDRON

MUNCY, PA.—The appointment of Jack Ellmaker, Geneva, N.Y. and formerly of Williamsport, Pa., as manager of Sprout-Waldron's resale division, has just been announced. He will be handling the sale of those products not manufactured by Sprout-Waldron but which supplement Sprout-Waldron equipment used in complete installations.

## Oriental Fruit Moth Found in Four Oregon Orchards

PORTLAND, ORE.—The Oriental fruit moth was found recently in four peach orchards near Portland and Salem by the State Department of Agriculture.

This serious insect pest has not been found in Oregon since 1951. Its current outbreak is small enough that an effective spray program may remove the infestation next spring, the department believes.

The two infested Salem orchards do not exceed 28 acres and the Portland infestation covers only seven trees near canneries. All four infested areas are privately owned.

Next year the Oriental fruit moth survey program in Salem and Portland will be stepped up to delimit the areas of infestation in Oregon. The department has been surveying for this insect pest in these same areas for several years and the recent discoveries were the first specimens found there.

It is believed that the infestations are of recent origin. The Oriental fruit moth first appeared in Oregon in 1945.

## Fertilizer Sales Show Gain in Kentucky in 1955-56

LEXINGTON, KY. — Fertilizer sales in Kentucky during the fiscal year ended last June 30 totaled 529,600 tons, a 1.3% increase over sales in the previous fiscal year, according to a report from the Kentucky Department of Feed and Fertilizer.

Mixed fertilizer sales totaled 432,278 tons for an increase of 3% over the previous fiscal year, while sales of materials amounted to 97,322 tons, a decrease of 7.6%.

Lower analysis mixed grades, such as 2-12-6, 3-9-6 and 6-8-6 fell off 24% in tonnage when averaged together, while higher analysis grades, such as 4-12-8, 6-12-12, 10-10-10 and 12-12-12 increased an average of 55%.

The leading mixed fertilizer was 4-12-8 with 84,951 tons, followed by 5-10-15 with 80,763 tons and 3-12-12 with 50,449 tons.

Mixed fertilizer containing 24 or more units of plant food has increased from 34% of the total tons sold in the 1950-51 fertilizer year to 77% in 1955-56.

Sales of materials during 1955-56 included:

Nitrate of soda, 1,467 tons; ammonium nitrate limestone, 54; ammonium sulfate, 485; cyanamid, 1,409; nitrogen solutions, 306; ammonium nitrate, 27,158; anhydrous ammonia, 1,641; urea, 162; total nitrogen materials, 32,682.

Soft phosphate, 887; ground rock phosphate, 14,499; basic slag, 323; superphosphate, 24,156; triple superphosphate, 2,283; calcium metaphosphate, 6,012; total phosphate materials, 48,160.

Sulfate of potash-magnesia, 544; sulfate of potash, 5,851; muriate of potash, 9,303; total potash materials, 15,698; total miscellaneous, 782.

### MCA Meeting

WASHINGTON—Clifford F. Hood, president of United States Steel Corp., will be the banquet speaker at the sixth semi-annual meeting and winter conference of the Manufacturing Chemists' Assn., Inc. The all-day meeting will be held at the Statler Hotel, New York City Nov. 20. George L. Parkhurst, vice president, Standard Oil Company of California (San Francisco), and General J. E. Hull (U.S.A., Ret.) MCA president, will speak at the luncheon. Arrangements for the meeting are in charge of a committee headed by Hans Stauffer, president, Stauffer Chemical Co.



Walter M. Young

## Walter M. Young Appointed to CSC Sales Position

NEW YORK — Commercial Solvents Corp. has named Walter M. Young to its agricultural chemical marketing and distribution organization, according to M. K. McConnel, southern sales manager for CSC agricultural chemicals department.

Mr. Young is assigned to the southern sales district, headquarters of which are at the company's Sterling, La., office. He will reside in Mt. Pleasant, Texas, with sales responsibilities covering the states of Texas, Oklahoma and parts of Arkansas and Louisiana.

A Texan, Mr. Young's entire career has been spent in agriculture. He received his bachelor of science degree in agriculture at Texas A&M College in 1935 and then pursued post graduate studies in forestry.

For 12 years he was a county agent in the Southwest. Prior to joining CSC, Mr. Young was manager of the Hi Yield Plant Food Co. in Mt. Pleasant, Texas.

## Fertilizer Meetings Planned at Iowa State College Nov. 7-8

AMES, IOWA—Iowa State College will be host to the 1956 Iowa Fertilizer Manufacturers Conference Nov. 7 and the ninth annual Fertilizer Dealers Short Course Nov. 8.

The morning program of the manufacturers conference will be devoted to water relationships and crop production, and a panel discussion of the proposed Iowa fertilizer law will highlight the afternoon session.

Dealers will hear Iowa State College staffers and other authorities during their meeting.

In conjunction with the two conferences, a technical discussion of phosphate fertilizer manufacture will be held the afternoon of Nov. 8. The Midwest regional meeting of the Chemical Engineering Section of the American Chemical Society.

Topics and speakers will be "Treatment of Western Phosphate Rocks to Improve Acidulation Characteristics," W. H. Honstead, Kansas State College, and D. R. Boylan, Iowa State College; "A Comparison of the Competitive Processes for Ammonium Phosphates from Wet Process Acid," G. Burnet, Iowa State College; "New Developments in Fertilizer Technology," D. R. Boylan, Iowa State College.

Mr. Boylan will be moderator of a panel on fertilizer trends, panel members will be W. H. Mason, Davison Chemical Co.; J. C. Sharp, Spencer Chemical Co.; H. J. Stangor, Allied Chemical & Dye Corp.; Oliver Haley, Continental Fertilizer, and T. Pesek, Iowa State College.

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## Good Weather Hastens Autumn Work in Mid-South

MEMPHIS—The weather finally right with the Mid-South farmer last week. Up until then, it either had been so dry it cut sharply into the cotton crop, or it was so wet it delayed his harvest plus land preparation for winter pastures and small grains.

Last week, the farmers went into the last lap of the harvest and started planting grains and pastures.

The weather was ideal for both, extension agents from the tri-state area of Arkansas, Mississippi and Tennessee reported.

The cotton crop is about 75 per cent harvested in the Mid-South, with some areas of Southern Mississippi and Arkansas having completed the harvest.

Soybeans are being harvested rapidly and yields are short in many areas because of the drouth. The weather was ideal for the rice harvest and much of the crop has been taken from the fields.

Farmers in Mississippi are shredding stalks and planting cover crops immediately after harvesting the cotton, the Agricultural Extension Service said.

Corn gathering picked up momentum as cotton picking pressures eased, and prospects for crops are rather spotty, with a good crop reported from Southern Mississippi and a drastic reduction in the northern part of the state.

Sod seeding on permanent pasture is becoming general as the dormant season for most pasture grasses nears.

The sweet potato harvest is in full swing with yields reduced but quality high, said Chesley Hines, horticulturist. Demand is good, he added.

Pecans are beginning to fall and the outlook is for a reduced crop because of high winds in the coastal areas. Prior rains have generally improved home gardens, said Kermit Buckley, garden specialist.

Arkansas farmers were busily gathering a good harvest of most crops. In the cotton-producing areas, gins were working into the night, and highways were taking on a white appearance from cotton dropped from trucks. More mechanical pickers were being used as a shortage of hand pickers continued.

Much of the early corn and sorghum crops was harvested during the week, but there still was a lot of sorghum in the fields. Only a few areas reported harvest of silage crops complete.

The harvest of early varieties of soybeans are getting under way and combine combines continued busy.

The drouth continued to hurt farmers who have been trying to get up crops of winter coverage of grains. Some farmers were going ahead with "dusting in" planting operations in the hope rains would come soon to produce sproutings.

Five Arkansas counties were approved by a state group for inclusion in a drouth aid request to the federal government. That makes 19 that have been recommended for federal aid—reduced prices on hay and feed. The government has denied aid to four counties and made no report on the others.

The West Tennessee farm situation has been improved greatly by rains throughout the area. Farmers now are able to move ahead with preparation and fall seeding. Although rain slowed the cotton and corn harvest, the tempo is expected to return to normal soon.

Throughout the 21-county area, farm agents are reporting excellent production on cotton picking and increased activity in land preparation projects.

## AERIAL PROJECT

SAN FRANCISCO—The Southern Pacific Railroad took to the air last month in an effort to help the farmers in the Imperial Valley of California. Southern Pacific engaged airplanes to spray a total of 92 miles of company right of way in an attempt to stamp out the disease-carrying leafhopper from weeds along the railway tracks. Spraying will continue until all but 1,000 acres of right of way are covered, according to Southern Pacific officials. This 1,000 acres represents areas generally free of the virus-infected weeds or areas in which ground spraying will occur.

## IRRIGATION SPECIALIST

TUCSON, ARIZ.—The appointment of Allen D. Halderman as extension irrigation specialist for the University of Arizona has been announced by Charles U. Pickrell, director of the Agricultural Extension Service.

## California Fertilizer Group to Get Blueprint For Selling the Sizzle

SAN MARINO, CAL.—"Selling the Sizzle in the Fertilizer Business" will be the subject of an outline of effective sales policy for the fertilizer industry to be given by Elmer Wheeler of Dallas, Texas, at the 33rd annual convention of the California Fertilizer Assn. at Hotel del Coronado Nov. 12. He will offer selling aids which should benefit the plant food industry in this age of intensive competition for the consumer dollar, according to Frank Scoville, Chula Vista, the program chairman.

The convention dates are Nov. 11-13, and the affair will attract 600 persons. William E. Snyder of Los Angeles, president of the association, will preside. Mr. Wheeler, who is perhaps best known by the public for the phrase which he originated and popularized, "don't sell the steak, sell the sizzle," will be featured speaker

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following luncheon on Nov. 12.

Mr. Wheeler has developed what he calls "tested selling sentences" composed from 106,000 word combinations, which are in use by 247 firms.

Dr. Philip Neff, Los Angeles economist, will give the convention a review of "Costs, Markets, and Prospects in the Fertilizer Industry." Dr. Neff is director, industrial and governmental economics research, of the Planning Research Corp., Los Angeles.

Delegates and guests will have an opportunity to participate during a panel discussion on the subject of the convention theme, "Some Aspects of Fertilizer Industry Economics." The panel activity will wind up the business sessions, which will see action taken on the association budget for 1957, a proposed revision of the CFA constitution and by-laws, election of four directors, each to serve three years, and election of association officers for 1957.



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# INSECT, PLANT DISEASE NOTES

## Alfalfa Aphid Damage Grows in Missouri

COLUMBIA, MO. — (Oct. 13) — Damage from the spotted alfalfa aphid continues to increase, and it can be expected to increase even more. It looks as though at least some fields are involved in nearly all sections of the state.

It now looks as though much of the corn in the state will come in from the field infested with angoumois grain moth. This is the moth that works inside the kernel and makes the holes in the grain commonly blamed on weevils. Damage is always worst in corn stored in the ear. If shelled, only the top few inches will be infested, but the moths will work throughout a crib of ear corn.—Stirling Kyd and George W. Thomas.

## Aphids Continue Activity in Kansas

MANHATTAN, KANSAS—(Oct. 8-13)—Spotted alfalfa aphid activity continues with a great range of population intensities throughout most of Kansas. A survey of fourteen south-east counties showed counts ranging from 20 to an estimated 800 per sweep. No honey dew was observed in any of the infested fields. Lady-beetles and lacewings were the dominant predator with counts that ranged from 3 to 17 per sweep.

Spotted alfalfa aphid populations on this fall's seedling plants vary from light to heavy in fields located in the Kansas River Valley, east central Kansas. Destructive populations were reported this past week from southeast Pottawatomie County. Alfalfa seedlings in pre-irrigated fields near Concordia, Cloud County, north central, were reported destroyed by spotted alfalfa aphid.

Southwestern corn borer populations are very light in southeast Kansas counties this season. The average number of girdled stalks for fourteen southeast counties is less than 1%. The following counties were surveyed: Butler, Greenwood, Woodson, Allen, Bourbon, Crawford, Cherokee, Labette, Neosho, Wilson, Montgomery, Elk, Chautauqua and Cowley.

In the Finney County area, southwest Kansas, additional fields of irrigated wheat are being damaged by a mite infestation, probably *Paratetranychus pratensis*. Most of the farmers with infested fields are obtaining good control of the mite by spraying. Areas in fields where plants have received permanent injury from mite activity are being replanted.—Dave Matthew.

## Variety of Insects In South Carolina

CLEMSON, S.C.—Here are the highlights from the Oct. 10 insect report from South Carolina:

Spotted alfalfa aphid found in Aiken, Kershaw, Laurens, Richland and Saluda counties. Sorghum yields appear to be erratic in Lancaster. Sorghum midge damage is present and a probable factor.

Eye gnats numerous around sandy soils but not on clay soils, Edgefield County. Reports of corn earworm damage to soybeans received. "Kissing bugs" reported Greenville.

Velvetbean caterpillar and southern grassworm moth catch increases, Charleston light trap. Armyworm, fall armyworm, yellow-striped armyworm still present at Charleston, Clemson, Florence.

## Alfalfa, Cotton Insects In New Mexico

STATE COLLEGE, N.M.—Spotted alfalfa aphids are causing moderate to severe damage to seedling stands of alfalfa in the Rio Grande and Pecos River valleys. Infestations on

established stands are generally light to medium with heavy infestations spotted throughout Dona Ana County.

Cotton aphid infestations are generally light in Dona Ana County. A few fields have medium to heavily infested spots within the field and the edges of a few fields are infested.

Desert mites are defoliating large spots on the edges and corners of several cotton fields in Dona Ana County. Damage is relatively light even though the infestations are extremely heavy.

Fall armyworms infested 75% of the stalks in one field of corn in Dona Ana County. Cabbage loopers are under control in most lettuce fields in Dona Ana County. Egg laying activity is still high.

Bollworms seem to be under control in most lettuce fields but moths are still active and eggs are being found in Dona Ana County. Armyworm, possibly fall armyworm, egg masses are also numerous on lettuce in Dona Ana County, but survival is low.—John J. Durkin.

## Fruit Insects Active in Florida

GAINESVILLE, FLA.—(Oct. 12)—A weevil in adult stage was collected on lychee at Nokomis, Sarasota County. San Jose scale in all stages was medium to heavily infesting plum at Macclenny, Baker County. Six hundred trees 5-8 ft. tall were infested.

A scale in adult stage was collected on lychee at Nokomis, Sarasota County. Pineapple mealybug in all stages was collected from pineapple at Gainesville, Alachua County.

Fall webworm in larval stage was heavily infesting pecan at Macclenny, Baker County. Approximately 100 trees were infested out of 1,000 inspected.

Pink scavenger worm in larval stage averaging 5-20 on 10 trees was collected on two varieties of grapefruit at Alva, Lee County.

Walnut caterpillar in larval stage and red-humped caterpillar in larval stage were infesting pecan at Macclenny, Baker County. Out of approximately 1,000 trees inspected about one third were infested and a

few trees up to 10 ft. tall were completely defoliated.

Southern armyworm in larval stage was collected on lychee at Nokomis, Sarasota County. Fruit scarring worm in larval and pupal stages was collected on grapefruit at Alva, Lee County. Erino mite in larval and adult stages infesting one tree out of 8 inspected was collected on lychee at Nokomis, Sarasota County.—H. A. Denmark.

## POWDERY MILDEW

(Continued from page 1)

recent experiments at Beltsville. They were Streptomycin, Mycostatin, Oligomycin, Fungichromin and Rimocidin, USDA said.

A report of these tests was presented in Washington by Dr. W. J. Zaumeyer of USDA's Agricultural Research Service at the 4th annual Symposium on Antibiotics, sponsored by the Food and Drug Administration.

Powdery mildew is a damaging disease of the nation's \$65-million-a-year bean crop, particularly in the South and on the Pacific Coast. The fungus thrives in cool weather and may cause substantial losses in beans that mature late in the fall. There are numerous races of this powdery-mildew fungus of beans, and no available varieties are resistant to all of them.

The antibiotic Anisomycin, a product of Chas. Pfizer & Co., is produced by the mold streptomyces griseolus, a relative of the organism that yields Streptomycin. Griseofulvin, discovered by English scientists and furnished for the Beltsville tests by Glaxo Laboratories, Ltd., is produced by the organism penicillin griseofulvin.

In tests reported earlier this year by Dr. Zaumeyer Anisomycin protected beans from rust and lima beans from downy-mildew infection. Used at the rate of 200 parts per million, the antibiotic eradicated rust from bean plants inoculated as long as four days before treatment. Griseofulvin also proved able to protect bean plants from rust in these earlier trials, USDA said.



**POISON IVY CONTROL PROJECT**—A poison ivy control project is underway in Valley Forge Park, Pa., where the weed has invaded more than a third of the shrine's 2,030 acres. Chemical being used is Weedazol, a formulation of the American Chemical Paint Co., Ambler, Pa. Above, standing in a patch of withered shrubs which before the control was a growth of poison ivy, are, from left to right, Robert H. Beatty, agricultural research director, American Chemical Paint Co.; Ralph C. Wible, Pennsylvania state forester; Ralph Kauffman, vice president of Asplundh Tree Expert Co., Jenkintown, Pa.; George F. Kenworthy, park superintendent, and William Allen, American Chemical Paint Co. director. More details of the control program appeared on page 19 of the Sept. 10 issue of Croplife.



Jack von Mettenheim

## Jack von Mettenheim Named to IMC Potash Division Sales Post

CHICAGO—The potash division of International Minerals & Chemical Corp. has appointed Jack von Mettenheim a sales representative in the Midwest, according to an announcement by Nelson White, vice president in charge of the division.

Mr. von Mettenheim has been associated with International Minerals & Chemical Corp. since May 15, 1953, first with its plant food division and since July of this year with the potash division.

He received a degree in agricultural management from the Halle University, Halle, Germany, in 1939. He acted as trustee and manager of several large farms in Germany and was district sales manager for the agricultural department of Farbwerke Hoechst, selling mixed fertilizer, nitrogen materials and agricultural chemicals to manufacturers and wholesalers, before coming to the U.S. in 1948. He is married, has one child, and resides at Niles, Ill., a suburb of Chicago.

## J. L. Gavaza Named Manager of Smith-Rowland Co.

NORFOLK—J. L. Gavaza, who has been in charge of the Lynn, Mass. office of Smith-Rowland Co., became manager of the firm effective Oct. 1. J. A. Monroe, vice president of the parent Smith-Douglass Co., announced last week. Mr. Gavaza joined Smith-Rowland in 1942 and has been in Lynn since.

In his new position, Mr. Gavaza succeeds Russell Spivey, who has been transferred to the parent Smith-Douglass Co. as Norfolk division fertilizer sales manager.

Smith-Rowland produces hydrolyzed poultry feathers protein feed supplement at its Selbyville, Del. plant, and Nutronite, a natural organic nitrogen, at plants in Norfolk, Va., and Granite City, Ill.

Mr. Gavaza will move with his wife and four children to Norfolk.

## Super Production Shows August Gain

WASHINGTON—U.S. August production of superphosphate and other phosphatic fertilizers amounted to 143,146 short tons (100% A.P.A.), an increase of 5% from the July, 1956 output, according to the Bureau of Census.

Shipments of superphosphate and other phosphatic fertilizers during the month totaled 98,194 tons or an increase of 2% over the previous month's volume. Stocks on hand at the end of August were approximately the same as those held on July 31.



## Canadian Industries Purchases Ontario Fertilizer Plant

TORONTO—Canadian Industries, Ltd., Montreal, has bought the Witts Fertilizer Works, Ltd., Norwich, Ont. This is the second company purchased by CIL in Ontario in the past two weeks, the first being William Stone & Sons, Ltd., Ingersoll.

V. B. Lillie, general manager of CIL's agricultural chemical division, will direct the company and he says that the general policy will remain unchanged. Gordon F. Bishop is to continue as sales manager and James W. Sinclair as plant superintendent. Samuel Cree, former manager of CIL's Montreal fertilizer works, has been put in charge of all operations at Norwich.

Frederick C. Bishop, president of the company, and Charles F. Bishop, vice president and general manager, have retired. The Witts company started business in Norwich 45 years ago as a manufacturer of compound fertilizers.

## Cotton Production Conference Scheduled

MEMPHIS—The second annual Beltwide Cotton Production Conference, will be held Dec. 13-14 at the Dinkler-Tutwiler Hotel, Birmingham, Ala., the National Cotton Council of America has announced.

The conference, first held in Memphis last year, brings together the latest information on insect and disease control, chemical weed control, fertilization, defoliation and other phases of cotton production.

It is sponsored by the cotton council, in cooperation with the Cotton Belt land grant colleges, the U.S. Department of Agriculture, the agricultural chemical industry, farm organizations, and others.

## AOAC Establishes Harvey W. Wiley Award

WASHINGTON—Kenneth D. Jacob, president of the Association of Official Agricultural Chemists, Oct. 15 announced the establishment of the Harvey W. Wiley Award for analytical methods, at the association's 70th annual banquet.

The award honors the memory of the founder of the federal pure food and drug law, who was also one of the founders of the association.

Mr. Jacob said that the annual award, which carries a cash prize of \$500, will be presented to the scientist or group of scientists which makes an outstanding contribution to development of methods of analysis of foods, cosmetics, drugs, feeds, fertilizers, pesticides and soil, as well as for methods in general analytical chemistry. The first award will be given at the 71st annual meeting of the association in October, 1957.

## Fertilizer Worker Income at New High

SAN FRANCISCO—The California fertilizer industry paid wages totaling \$1,777,889 during the last quarter of 1955, according to the Bureau of Research and Statistics, California Department of Employment.

An average of 1,200 persons was employed in the fertilizer industry during each month of the quarter. Seventy nine units reported, so the average number of employees per company was fifteen. The average income per worker for the quarter was a record high \$500 per month. There are no comparable figures available for the fourth quarter of 1954.

## FALL PLOW-DOWN

AMES, IOWA—Phosphorus and potassium fertilizers plowed down now will be as effective as if they were plowed down in the spring. J. A. Stritzel, Iowa State College agronomist, said Oct. 17.

## CONTROL OFFICIALS

The Association of American Fertilizer Control Officials and the Association of American Pesticide Control Officials were holding their annual meetings in Washington late last week. Reports of these sessions will appear in next week's issue of CropLife.

## No Aphids

PORTLAND, ORE.—The annual State Department of Agriculture spotted alfalfa aphid surveys failed to reveal any infestation by this pest. A recent check of the John Day area terminated the department's spotted alfalfa aphid program for the year, reports F. P. Larson, State Department of Agriculture survey entomologist. He says frosts and wet weather now will prevent any spotted aphids from becoming established in Oregon until next spring.

## National Mechanical Corn Picking Plot Yields 127 Bu. an Acre

OMAHA—Official yield from the National Mechanical Corn Picking Contest plots was 127 bu. an acre, it has been announced by University of Nebraska agronomists. The contest was held near Columbus, Neb., October 11-12.

The yield, according to Carol Rudat, owner of the land on which the contest was held, was at least 50 bu. to the acre more than last year's on the same land. Mr. Rudat points out that, aside from increasing the amount of fertilization, no special practices were used.

Fertilization consisted of 50 lb. of superphosphate and 150 lb. of actual nitrogen in the form of Urea 45. Both materials were plowed down. A liquid starter was applied at the rate of 100 lb. to the acre.

Mr. Rudat estimates that increasing his fertilization netted him an ad-

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ditional \$50 per acre. Complete fertilization costs, he says, amounted to about \$26 per acre.

The contest plots were irrigated through shallow ditches between the corn rows. Irrigation was begun in late June and repeated thereafter according to soil moisture needs. The corn was planted with an average population of 16,000 stalks per acre.

## CONSOLIDATION APPROVED

NIAGARA FALLS, N.Y.—The boards of directors of Hooker Electrochemical Co. and Oldbury Electro-Chemical Co., both of Niagara Falls, N.Y., have approved a formal agreement for consolidation of the two companies subject to approval by the stockholders of each company. Both companies have directed the calling of special meetings of their respective stockholders on Nov. 29, 1956, when the consolidation agreement will be submitted for approval. Under the terms of the proposed consolidation, Hooker will be the continuing company.



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Stimulate fertilizer sales with the addition of  
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65% Mn SO<sub>4</sub>. Designed specifically for inclusion in mixed fertilizer or direct application to the soil.

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Minimum 41% Manganese as metallic. A neutral, finely divided, water insoluble form of nutritional Manganese designed specifically for direct foliar application as a spray or dust or in combination with other foliar applied pesticides.

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Minimum 48% Manganese as metallic. For fertilizer mixing, direct foliar application, direct soil application, and animal feeds.

➤ **SPRAY-DUST MIXTURES**

Tennessee's Nu-Z, Nu-Iron, Nu-M and Tri-Basic Copper Sulfate are especially suited for use in preparing nutritional and fungicidal spray and dust mixtures and for use in mixed fertilizers.

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## Program Set for Agricultural Ammonia Institute Convention

ATLANTA—Leading agricultural authorities will appear on the program at the sixth annual convention of the Agricultural Ammonia Institute, to be held Nov. 7-9 at the Atlanta Biltmore here, according to Jack F. Criswell, Memphis, executive vice president of the institute.

Appearing on a panel, "Pasture Improvement and Fertilization," at 10 a.m., Nov. 8 will be Dr. D. R. Dodd of Hedgesville, W.Va., chairman emeritus of the Ohio State agronomy department; W. R. Thompson, leader, extension agronomy, Mississippi State College, and George A. Rogler, research agronomist, field crops research branch, Agricultural Research Service, Great Plains Experiment Station, Mandan, N.D.

Dr. C. C. Murray, dean of the College of Agriculture, University of

Georgia, will speak the same day at a field demonstration to be held at the experiment station at Griffin, Ga.

J. Richard Adams, senior chemist, Fertilizer and Agricultural Lime Section, ARS, USDA, Beltsville, Md., will speak on "The Nitrogen Situation" at 10:30 a.m., Nov. 9.

Other leading speakers will be Dr. Kenneth McFarland, educational consultant, General Motors Corp.; Dr. Byron T. Shaw, administrator of the Agricultural Research Service, USDA, Washington, D.C., on "USDA Research," and Max Fetty of Delta Tank Manufacturing Co. of Baton Rouge, La., on "Selling Through Public Relations."

An annual banquet and floor show will conclude the convention at 7:30 that night.

A trade show, featuring the latest equipment for spraying ammonia directly to the soil, will be open before and after all sessions of the convention.

Jeff I. Davis of Southeastern Liquid Fertilizer Co., Albany, Ga., is pro-

gram chairman. He is a past president of the Institute.

Mr. Criswell said institute members from throughout the nation are expected to attend. He said Georgia farmers are invited to attend the field demonstration at the experiment station at Griffin, where J. G. Futral, head of the Georgia department of agricultural engineering, will be in charge.

As an added treat, arrangements are being made for convention delegates so desiring to attend the Tennessee-Georgia Tech football game on Saturday, Nov. 10.

Maj. Gen. Ralph H. Wooten (Air Force, Ret.), Mid-South Chemical Corp., Memphis, is president of AAI.

### NORTH CAROLINA SALES

RALEIGH, N.C.—North Carolina fertilizer sales during August totaled 21,024 tons, compared with 15,575 tons in August a year ago, according to the North Carolina Department of Agriculture.



Donald P. Cross

**NEW TRAFFIC MANAGER**—Donald P. Cross has been made traffic manager for Southern Nitrogen Co. Inc., Savannah, Ga., the company announced. He has had many years of traffic experience with a number of firms in the southeastern states and in addition, served five years in the U.S. army as transportation officer in the Quartermaster General's office at Seattle, where he was responsible for handling perishable products for overseas shipments. Mr. Cross will make his headquarters in Savannah.

## Pesticide Residue Clearing House Started in California

BERKELEY, CAL.—The California Agricultural Experiment Station has announced that it will operate a clearing house here for test results gathered in the West of pesticide residues on crops.

Several hundred western crops are treated with one or more of the 100 plus pesticides now in use, said William M. Hoskins, professor of entomology and parasitology, University of California, Berkeley. Mr. Hoskins heads the California project, which is supported by funds from the U.S. Department of Agriculture.

"One of the most important reasons for determining pesticide residues," said Mr. Hoskins, "is to provide data that can be used in predicting the probable residue from farmers' control programs. Such use is greatly curtailed now by the variety of forms used in reporting test results and the frequent omission of information on spray or dust schedules, formulations used, machinery, weather, harvest time and period of storage."

"To remedy this situation, the California coordinating center will canvass all western laboratories—university, governmental, industrial or private—that are analyzing for pesticide residues. The California center will then collect data on the size and persistence of the residues."

"The studies we plan to make are designed to develop uniform methods that will give reliable results when used by any laboratory anywhere. Such studies will assure western producers that their products will not be seized because of excessive pesticide residues, and consumers will know that the products they buy are safe."

### FARM BOOK

PORTLAND, ORE.—A booklet designed to answer climate, soils and marketing questions about farming in Oregon has been published by the State Department of Agriculture, Salem. Nearly six months in preparation and printing, the booklet features 40 pages of harvest dates, vacation and recreation areas, special crops and tips for farmers with small acreage.

## HOW UNION MULTIWALLS BUILD MORE BUSINESS FOR THE FERTILIZER INDUSTRY

**"For 10 years  
I've bought fertilizer  
only in Multiwalls"**

**Raymond Rossback, farmer,  
Davidsonville, Maryland.**

"See how correct fertilizing pays off?" says Mr. Rossback. "This is Southern Maryland cigarette tobacco, Type 32, of fine texture and quality. I fertilize heavily to grow it, from 1,000 to 1,500 lbs. per acre. I use 80-lb. Multiwalls, hand-pouring the fertilizer into the spreader machine, then out to the fields. That's the easiest and most practical way to do the job."

**Union Bag Information program  
promotes fertilizer**

Mr. Rossback took over his property in 1911, when it was practically a wilderness. Neighbors said, "You won't last long." They were wrong; good management and the proper use of fertilizer, plus hard work, won out. To help farmers like Mr. Rossback, Union stresses those themes in a countrywide educational program.

Union's information program helps build sound and expanding farm markets for fertilizer distributors. Union's Multiwalls, used by top fertilizer companies, lighten farm chores and create satisfied farm customers. The strong, attractive Multiwall pictured below was designed and made by Union for The American Agricultural Chemical Company.



**"Union's educational program  
should aid farmers in using fertilizer more efficiently."**

**Union Multiwalls have an excellent performance record with us. We use them in quantity."**

Mr. John A. Layton, Superintendent, Baltimore Plant, American Agricultural Chemical Company, Baltimore 24, Maryland.

The American Agricultural Chemical Company is one of the country's leading fertilizer manufacturers, distributing Agrico, AA Fertilizers and 18% Normal Superphosphate.

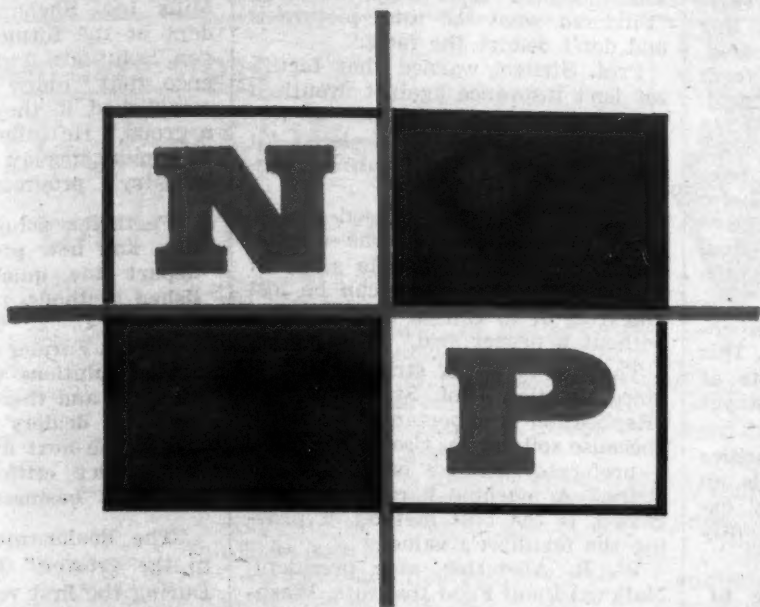


# UNION Multiwall Bags



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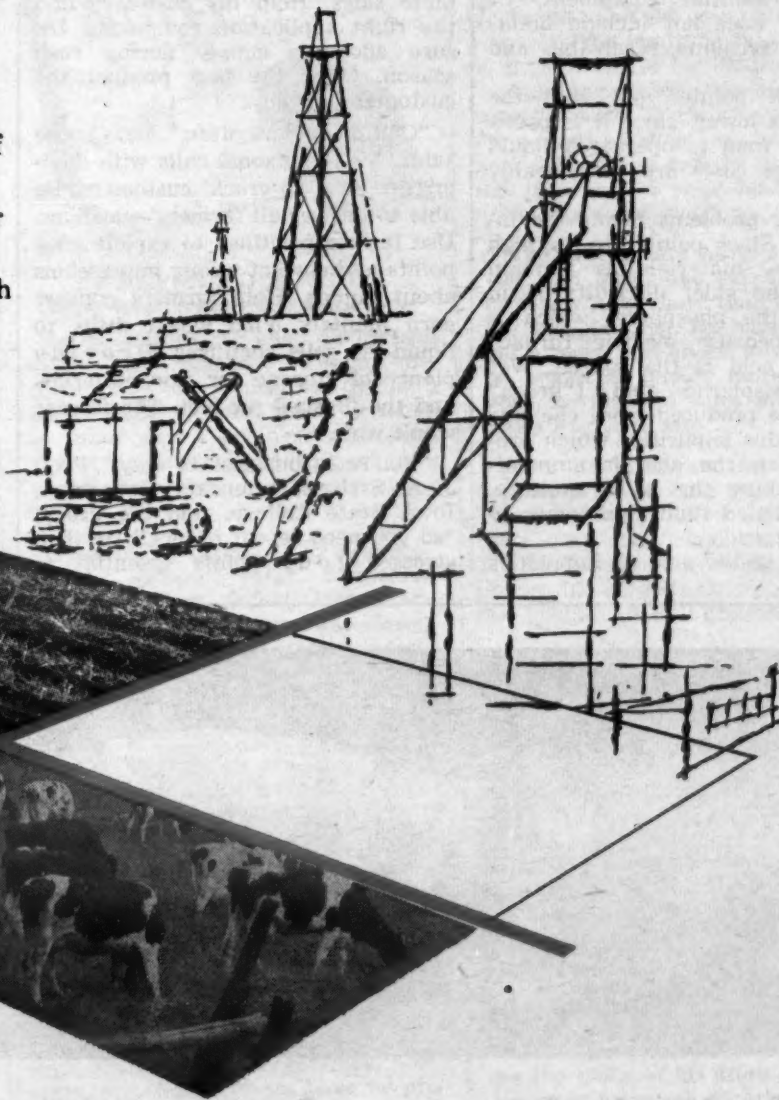




## *a joint venture in Potash*

A new, substantial and dependable source of potash for fertilizer manufacturers is being developed by National Potash Company in New Mexico.

National Potash is a joint undertaking of Pittsburgh Consolidation Coal Company and Freeport Sulphur Company. The former is one of the nation's major coal firms, the latter a leading producer of sulphur with additional interests in oil and other minerals. The skills which they bring to the mining, refining and marketing of potash assure top quality, uniformity and service.



**NATIONAL**

**POTASH COMPANY**

205 EAST 42nd ST. • NEW YORK 17, N. Y.



## SOLUTIONS MEETING

(Continued from page 1)

ments in recent years, according to A. V. Slack, chief, program development staff, Tennessee Valley Authority. Mr. Slack reviewed the current situation on liquid mixtures and reported on research activity in the field.

Mr. Slack estimated that there are now 80 to 90 plants producing liquid mixed fertilizer in the central and eastern states—about twice as many as were in existence in early 1955. He estimated average production per plant at between 1,000 and 2,000 tons per year. This would mean a total in 1956 of 80,000 to 175,000 tons. He cautioned, however, that although many plants have sprung up the total production is still extremely low as compared to solid fertilizers. The future growth of the liquids will depend on how well some of the problems in production and handling can be worked out, he said.

In California, Mr. Slack noted, liquid mixed fertilizer has been used for some time. Last year, one ton of liquid was used to every five tons of dry fertilizers. The report for the second quarter of this year—ending in June—showed a ratio of 1 ton of liquid to 3½ tons of dry.

He listed the low initial cost of a liquid plant as a factor in the growth. "It is possible to equip a liquid plant with a 10 to 15 ton hourly capacity for from \$10,000 to \$40,000," Mr. Slack said. "This figure includes only the essential equipment, of course, and does not include buildings, land, accounts receivable and other items."

Mr. Slack pointed out that the labor cost is lower, since it is possible for one man to operate a liquid plant. Power costs are considerably less, too.

Regarding problems facing the industry, Mr. Slack pointed to the high cost of raw materials as a main problem. The chief difficulty is in regard to the phosphate, which is expensive because electric furnace phosphoric acid is the source. Wet process phosphoric acid ("green" acid) can be produced more cheaply, but it contains impurities which precipitate when the acid is ammoniated in making the liquid mixture. Mr. Slack listed four approaches to using green acid.

(1) Freeing the acid of impurities

before use in making the liquid mixture. Several research laboratories are working on this.

(2) Preventing impurities from precipitating by using a sequestering agent. He pointed out that a new phosphate product under development by TVA has promise in this respect. This is seyserphosphoric acid, which is a highly concentrated form of electric furnace phosphoric acid. The P<sub>2</sub>O<sub>5</sub> content is about 76% as compared to 54% in normal furnace acid. At this high concentration, part of the acid is in the pyrophosphoric form, and this acts as an effective sequestering agent when a small proportion is mixed with the green acid.

(3) Keeping impurities in suspension by very rapid ammoniation. This has given good results in tests at TVA but all variables have not yet been investigated.

(4) Precipitating the impurities and filtering them out. This is an effective method but relatively expensive. It is being used currently by one or two companies.

"You have only one thing to sell," Mr. Crouse told the group, "and that's service. Good product and good service go together."

Mr. Crouse outlined six steps a producer should follow. They are: Set up good dealers. Give them a protected territory. Help them promote sales. Help his customer find the right application equipment. Insure adequate supply during rush season. Offer the best product the customer can buy.

"Call on dealers often," Mr. Crouse said. "Make personal calls with dealers on 'hard to crack' customers. Be able to answer all farmers' questions. Use farmer meetings to exploit good points and correct wrong impressions about liquids. Help farmers convert corn planters and wheat drills to liquid—it sells fertilizer. Provide plenty of storage for raw materials and the finished product. The farmer won't wait."

"You're in business to stay," Prof. J. A. Stritzel, extension agronomist, Iowa State College, told the group, "so you need repeat orders." He then stressed four points essential to

building customer confidence. These are:

Be genuinely interested in your customer; stick to the facts; do a good job of application and make use of check strips.

Prof. Stritzel told the dealers to offer an unbiased soil sampling service to determine the customer's needs. "Tune your sales approach to the soil moisture condition," he said. "Find out what the total picture is and don't distort the facts."

Prof. Stritzel warned that fertilizer isn't insurance against drouth if subsoil water isn't present. "If fertilizer doesn't work," he declared, "it will hurt you—and the entire industry."

The importance of a good seal in applying the solutions was emphasized by Prof. Stritzel. He said "37 to 52% of the nitrogen can be lost and from 37 to 41% of the materials without a proper seal."

The use of check strips will convince skeptics, Prof. Stritzel stated. "Replication is important," he noted, "because soil varies. Use at least two—preferably three or four—test strips." A machine harvest, he concluded, is the best method of proving the fertilizer's value.

W. R. Allstetter, vice president, National Plant Food Institute, Washington, told association members that "a dollar's worth of fertilizer today is worth almost 2½ times as much to the farmer as it was in 1939." He spoke on the subject of "Production and Use of Fertilizer Nitrogen."

"Fertilizer is one of the really great bargains in agriculture today," Mr. Allstetter said. "This is a story we should tell over and over again. It is a story which has as yet not, I am afraid, gotten over to the farmer or for that matter to many professional agricultural workers."

"We must continue to emphasize the profit possibilities to the individual farmer of proper fertilizer usage," Mr. Allstetter said. "This is largely a matter of presenting authentic economic interpretations of fertilizer response data."

"Fertilizer properly used is a cost cutter. Properly used, and with appropriate acreage reductions, fertilizers can mean more farm income from less crop output."

Mr. Allstetter said that the economic well being of agriculture and the fertilizer industry largely depends

on how good a job is done on focusing attention on fertilizer as a bargain, as a profit producer, and a cost cutter.

Pointing out there have been large increases in the consumption of nitrogen, phosphate and potash, he emphasized that "top profits will result from the application of the major nutrients in proper balance as needed."

Wayne R. Johnson, Johnson Bros. Mills, Inc., Shenandoah, Iowa, president of the former National Nitrogen Solutions Assn., told the audience that "much more can be accomplished if they joined hands as a group." He called attention to the equipment display as symbolic of the industry's progress.

Fertilizer solutions are a new idea and new programs must not depart too quickly from established methods, to make progress, warned C. L. Taylor, Michigan Bean Co. Farmer acceptance of fertilizer solutions varies from state to state and there is also a variation in dealers' enthusiasm. He called the next five to 10 years as being the critical period in the solutions business.

"The dealer must prove benefit to the grower," Mr. Taylor stated. During the first year (1955) his firm insisted that the farmer leave a test strip to make growth comparison. "A satisfied farmer is a good salesman," he explained.

Mr. Taylor said that now the farmers don't want to leave even a small test strip—they don't want to pass up any increased yield.

"We want them to keep a test plot because it keeps them sold." The Michigan Bean Co. uses a news letter which is sent to growers every two to three weeks. They are time to give the grower ample time to consider his needs. This media is most effective tool, Mr. Taylor said. Newspaper advertising, combining bold format with educational type is used. Lots of pictures are used.

Mr. Taylor said that this firm held several farmer meetings last winter. This enabled him and the farmers to meet on common ground. Farmers are encouraged to participate in the programs. One meeting featured "Dr. I.Q." type format. Farmers were asked questions about nitrogen solutions. It got the meeting off to a fast start and got farmers thinking about nitrogen.

"Meetings of this type open the door to a personal farm visit. And sales are made on the farm," Mr. Taylor said. His firm works closely with soil and crop department county agents and universities. "A teachers are an important sales force. A son is often able to sell his dad on the use of nitrogen solutions."

The association's board of directors named for the coming year are:

Roy F. Broyhill, the Broyhill Co. Dakota City, Neb.; Richard Cecil Owensboro, Kansas; Mr. Crouse, Donald A. Fletcher, Pacific Supply Cooperative, Ontario, Ore.; Mr. Foster; Mr. Johnson; Mr. Parrish; W. Harold Schelm, Schelm Brothers Inc., East Peoria, Ill.; Asa J. Schuele, Welcome (Minn.) Agricultural Chemical Co.; George H. Serviss, G.L.I. Exchange, Ithaca, N.Y.; William I. Spargur, Delavan Mfg. Co., West Des Moines, Iowa; Mr. White, and R. L. Wooley, Wallace & Morley Co. Bayport, Mich.

New members of the board are: Todd Tremblay, Washington Farmers Coop, Seattle; Donald Webber, Spraying Systems, Bellwood, Ill., and Ernest Harper, Nitrogen Division, Allied Chemical & Dye Corp.

## SOIL BANK ACRES

LARAMIE, WYO.—Some 119 Wyoming farmers have signed up to put 7,828 acres in the 1957 winter wheat acreage reserve program of the soil bank.



## Today's biggest bargain in Spreaders!

### BAUGHMAN K-5 Series

## • YOUR CHOICE OF...

- ... 3 Drives
- ... 3 Conveyors
- ... Single or Double Distributors

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# Better Selling

**Richer  
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**A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW**

## WITH DEPARTMENT TYPE STORE

### Arizona Dealer Shifts Appeal To Home and Garden Market

By JESS F. BLAIR  
Croplife Special Writer

A changing trend in the selling of agricultural chemicals caused Burt Tiemann of Tucson, Ariz., to revamp his store completely. Instead of selling large orders of fertilizers and feed to farmers and ranchers, he decided to go after the town trade. He had a good reason to do so.

"I had to face facts," he said. "When I put in here 14 years ago, there were only five or six places where a farmer could buy feed and fertilizer. Now there are 50 such places, and each one seems to be trying to cut everyone else's throat. For a sack of fertilizer costing the dealer \$2.95, they were selling it for only \$3.25.

"That was when I decided to dress up the old store, put in departments and add a lot of items to catch the growing suburban trade."

At one time Mr. Tiemann kept a \$30,000 inventory. Now it averages only about \$10,000, but it is tied up in merchandise that moves. He investigates every new item carefully before adding it to his displays. He asks himself will it be of service to his customers and will it sell?

In remodeling the store, he changed both the inside and outside, and painted it and put out sidewalk displays until it now is seen admiringly by hundreds of drivers who travel the busy street.

He added well known brands of lawn mowers, hand sprayers, small hardware and other home and garden needs. Just to one side of the store he added a nursery. This proved a real moneymaker from the start.

One reason for the success of the nursery is found in the tremendous growth of Tucson. It has boomed into one of the Southwest's leading cities. Large chunks of desert are being swallowed by new suburbs, and these new owners waste little time in covering the hot sands with trees, shrubbery and grass. And when they buy these plants, they also need sprinklers, lawn mowers, weeding equip-

ment and a dozen other items to take the backache out of gardening.

All this has kept the sale of fertilizer and insecticides about as high as ever. However, it is a different type trade. Whereas he used to sell in 100-lb. sacks, now it is mostly in small bags or containers.

"People quibble over the price of a truckload of fertilizer," Mr. Tiemann said, "but in buying 10-pounds, they seldom even ask."

He has found that with the department type of store, he can sell a lot more long profit items, and constantly figures the profit on various types of merchandise being handled.

Luckily he saw this movement coming and got in on the ground floor. For awhile he was trying to hold on to only the farm trade, and all the time more and more stores were selling fertilizer and insecticides at lower and lower prices. He still sells to farmers but the bulk of the trade is now with city and suburban dwellers.

He has found a lucrative business in small city flocks of laying hens and fryers. By selling baby chicks, he also gets a lot of sales on poultry equipment, medication and feed.

Adding parakeets and pet supplies also brought a new group of customers. It enables him to sell cages, feed and medication to the increasing number of bird owners.

In stressing small sales, he also had to change his methods of putting out credit. He decided to put the store on a cash and carry business with no more credit or deliveries. Now he makes an occasional delivery but it is to some old customer or friend who may be without an automobile.

By cutting out deliveries, it enabled him to eliminate one employee and a truck, which reduced the overhead. Strangely it didn't damage his farm trade, as farmers seemed to be quite willing to do their own hauling.

Stopping the credit stopped a lot of his headaches, because he no longer had to badger customers who were

(Continued on page 12)



## SHOP TALK

### OVER THE COUNTER

#### FOR THE DEALER

By EMMET J. HOFFMAN  
Croplife Merchandising Editor

Sometimes a retail store's toughest competitor is not the fellow's store down the street, but the operator himself.

For example, a successful independent supermarket operator said he increased his gross business in five years from \$100,000 to \$800,000 annually.

"My wife and I were working hard in our little grocery store, sometimes 14 hours a day, and we just didn't seem to make much progress," the grocer said. "Finally, I asked my good friend, a supplier's salesman, what was wrong with my business—why it didn't seem to grow."

The salesman reluctantly told him that he was running a "papa" and "mama" kind of store.

"The trouble is you and your wife are so anxious to save the wages of clerks that you are doing all the work yourself. The result is that you have no time or desire for future planning, for studying competition and possible improvements. The work you are now doing can be done by one or two clerks. Only you can do the thinking and planning in your business. The clerks can't and won't do it."

The grocer said he took the advice and hired one extra clerk so he would have more time for thinking and planning. He found that he got a new slant on his business and he began to devote more time to good buying and sales promotions. Sales began to rise.

Soon, he hired another clerk and got his wife to help run the office. Together they studied their business, their customers' and store's needs. The business kept growing. Today the grocer and his wife have 45 employees and business is still growing.

### \$100 in Paint Goes Long Way

Many farm supply dealers claim that they don't have the time or the money to remodel or paint their stores, install new lighting or expand their advertising. Actually, \$100 worth of paint goes a long way in brightening up the store. Sometimes the mere installation of a few larger light bulbs and adding a few extra ones make a decided improvement in the store's appearance and attractiveness.

Farmers often judge a merchant by the looks of his store or general business premises. That's why it is a mighty good business idea to keep the store looking clean and orderly at all times, as though the operator cared how the place looks and wants people to notice its neatness.

Farm supply stores generally can stand much improvement in cleanliness, lighting, fixtures and general business appearance.

### More Business Assured

It has been proved that wise remodeling, painting and cleaning up, plus good lighting and better display are sure means of getting more business. Furthermore, when a store has

(Continued on page 13)



By RAYMOND ROSSON

County Agent, Washington County, Tenn.

Farm families are good customers, because they purchase so many different kinds of merchandise during a twelve month period. While at lunch the other day a business man said, "I had never realized that a farm family does buy quite so many items."

Just think, farmers buy fencing, roofing, lumber, paint, hardware, seed, fertilizer, insecticides, tractors, trucks, drills, harrows, plows, seeders, sprayers, spreaders, mowers, combines, milking machines, motors, pumps, many tires, oil, gas and electricity.

These are the items city people don't have to buy. On the other hand, farmers also purchase many of the same items that city people buy, such as TV sets, radios, refrigerators, deep freezers, furniture, stoves, carpets, clothes, shoes, cars. Of course people in town use tires, oil, gas and electricity, but nothing like the amount per family the farmers use.

City folks purchase a lot from farm people too . . . milk, beef, poultry, eggs, fruit, berries, vegetables, pork, grain, etc. And farmers have to produce and sell these items, before they can purchase the items city people sell.

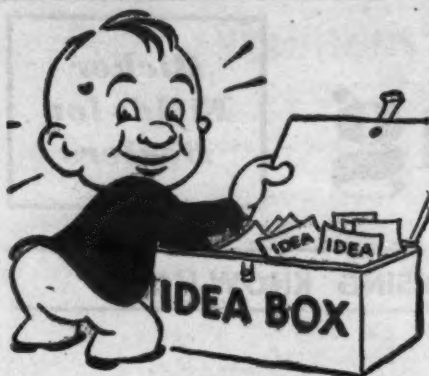
We realize that changes will come about, and on the farm it is pretty hard to tell what the seasons will bring forth. A dry month, a bitter cold month, or an extremely wet month can make many changes in farm productions, and believe it or not, there is danger of under production as well as over production in any one given crop.

Farmers need a backlog of information as well as up to the minute current information. Even eating habits of 165,000,000 people and what they had for dinner, could throw production out of kilter. Agriculture is big business.



**ARIZONA DEALER**—Burt Tiemann, shown at the right, above, with a customer, is owner and manager of Tiemann's in Tucson, Ariz. He pepped up his business by remodeling the store, departmentalizing the merchandise and appealing to the home and garden trade.





## What's New...

### In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

#### No. 6486—NH<sub>3</sub> Systems

The Dallas Tank Company, Inc., has published a folder and price list for its NH<sub>3</sub> systems, trade named the Economy line. The company makes equipment for various phases of the anhydrous ammonia industry. Applicator tanks in the following gallon sizes are available: 100, 110, 150, 200 and 250; field tanks—500 and 1,000; carts—150, 250, 300 and 500. The folder lists tank specifications and notes that the tanks are guaranteed for one year. For more complete details check No. 6486 on the coupon and drop it in the mail.

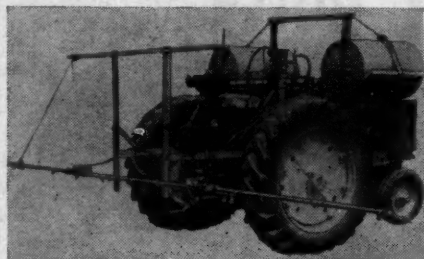
#### No. 6487—Gardening Booklet

"Facts on Hydroponic Growth" is the title of a booklet written by Dr. Paul A. Chatelier, plant nutritionist. Hydroponics, according to Dr. Chatelier, means literally "growing plants without soil." The booklet explains the author's method of growing plants, shrubs, flowers, fruits or vegetables in a supporting medium (gravel, sand, sphagnum moss, wood chips) supplemented by Chatelier plant food. Good results are obtained with the product, according to the booklet. Hydroponic gardening, it is explained, is especially suitable for apartment dwellers, home owners

with small yards and even for those who want to make this type of gardening a profession. A copy of the booklet may be secured without charge by checking No. 6487 on the coupon and mailing it to Croplife.

#### No. 6488—Liquid Applicator

Details of the new "all-purpose" liquid applicator suitable for both insecticide and herbicide applications, as well as for liquid fertilizer, have been announced by the Larson Machine Co. An outstanding feature claimed for the basic applicator unit is that it can be fitted with inexpensive at-



tachments to make diversified applications while plowing, discing, planting or cultivating. It is a new concept for farm operation because of its flexibility, company officials state. Details are available by checking No. 6488 on the coupon and mailing it to Croplife.

#### No. 6490—Fertilizer Equipment

Edw. Renneburg & Sons Co. has released a new 12-page bulletin describing its continuous granular fertilizer processing equipment. The bulletin covers ammoniators, granulators, continuous combination ammoniator-granulators, dryer furnaces, dryers, coolers, combination dryers and coolers, air handling systems and pilot plant equipment. Included are equipment photographs, plant shots and detailed drawings. There is also a layout of a fertilizer plant using typical Renneburg equipment and a granular fertilizer unit flow sheet. Secure the bulletin by checking No. 6490 on the coupon, clipping and mailing it to Croplife.

### Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

#### No. 6489—Soil Sterilant Brochure

An 8-page, illustrated brochure, which describes how soil fumigation increases yields of many crops has been published by Stauffer Chemical Co. The new publication claims that malnutrition and drouth have often been blamed for crop failures whereas root and seed-attacking fungi and nematodes were the real culprits. The brochure outlines methods of fumigating the soil by applying Stauffer's temporary soil sterilant, Vapam. Various application methods such as a sprinkling can, hose proportioner, sprinkler, deep injection, shallow injection, plow sole application, flood irrigation or sprayer may be used. The fumigant is said to kill all soil pests, including fungi, nematodes, weeds and weed seeds, and then evaporate as a harmless gas. It has been used in treating both seed beds and fields in all U.S. climates. Secure the brochure without charge by checking No. 6489 on the coupon and mailing it to Croplife.

#### No. 6485—Soil Sterilant

A four-page, well illustrated brochure, which describes a one-application method of ridding soils of weeds, weed seeds, fungi and nematodes, has been published by Stauffer Chemical Co. The publication places main emphasis on the treatment of tobacco plant beds. It states that fall treatment with Vapam, the temporary soil sterilant developed by Stauffer chemists and agronomists, permits spring seeding at the earliest possible date and eliminates the labor expense of weeding. The brochure

outlines basic, easy-to-follow procedures to be employed in taking advantage of the product to eradicate all types of soil pests. Copies of the brochure are available, without charge, by checking No. 6485 on the coupon and mailing it to this publication.

#### No. 6484—Tractor-Shovels

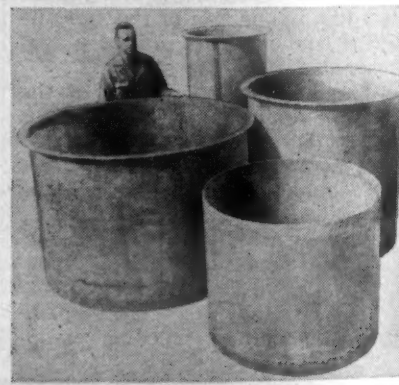
Two new four-wheel drive, pneumatic-tired tractor-shovels have been announced by the Frank G. Hough Co. Part of the "Payload" line, the model HH has a payload capacity of 1½ cu. yd. and the model HU a capacity of 1¼ cu. yd. The necessity of coming to a stop for a range shift is eliminated with a new "no stop" transmission. All shifts in both forward and reverse can be made without slowing down. Power steering and power brakes are provided. Complete specifications and literature on both models are available without charge. Check No. 6484 on the coupon and drop it in the mail.

#### No. 6483—Wood Preservative

A new folder on the wood preservative called by the trade name Carbolineum, has been prepared by the Carbolineum Wood Preserving Co. The folder claims that the product doubles the life of wood, stops termites easily and surely and stains wood a nut brown color. It adds that one application a year on poultry houses kills and keeps out chickens, mites, blue bugs and fowl ticks. The product is recommended for posts, barns, cribs, poultry houses, cabins and cottages. Covering capacities are included in the folder. The folder may be secured without charge by checking No. 6483 on the coupon and mailing it to this publication.

#### No. 6479—Farm Chemical Tanks

Corrosion-resistant polyester glass reinforced tanks are being offered by Haveg Industries, Inc. It is claimed that the tanks resist the attack of liquid fertilizer solutions, phosphoric and sulfuric acids as well as other fertilizers, insecticides and herbicides. Company officials say that the polyester glass tanks are also extremely light. The heaviest of those pictured



is 150 lb., holds 600 gal. and can be put in place by two men. Flat covers are available for all tanks. A wide range of sizes (up to 30,000 gal.) is available. The firm also designs tanks for individual requirements. Also available is a fume duct for removal of corrosive and obnoxious vapors, scrubbing systems and related accessories. Secure more complete details by checking No. 6479 on the coupon and mailing it to Croplife.

#### No. 5553—Car Loader

Officials of the R. T. Sheehan Co. have announced new additions to the firm's system of one-man push button loading of boxcars and trucks. The firm's Stacker Car swings manually 180° off from the end of the Flex-Bend (see picture) and raises, lowers, moves forward and reverse with push buttons. The operator guides the Stacker Boom to the spot where he wants to place the bags. The Stacker Boom has an 18 in. wide belt and comes in two lengths, 6 ft.

#### Send me information on the items marked:

- |   |   |
|---|---|
| <input type="checkbox"/> No. 5552—Boilers           | <input type="checkbox"/> No. 6484—Tractor Shovel    |
| <input type="checkbox"/> No. 5553—Car loader        | <input type="checkbox"/> No. 6485—Soil Sterilant    |
| <input type="checkbox"/> No. 6476—Soil Handbook     | <input type="checkbox"/> No. 6486—Anhydrous Systems |
| <input type="checkbox"/> No. 6477—Fertilizer Hose   | <input type="checkbox"/> No. 6487—Gardening Booklet |
| <input type="checkbox"/> No. 6479—Tanks             | <input type="checkbox"/> No. 6488—Applicator        |
| <input type="checkbox"/> No. 6481—Insecticides      | <input type="checkbox"/> No. 6489—Brochure          |
| <input type="checkbox"/> No. 6482—Garden Chemicals  | <input type="checkbox"/> No. 6490—Equipment         |
| <input type="checkbox"/> No. 6483—Wood Preservative |   |

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS  
PERMIT No. 2  
(Sec. 34.9,  
P. L. & R.)  
MINNEAPOLIS,  
MINN.

BUSINESS REPLY ENVELOPE

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67

Reader Service Dept.

Minneapolis 1, Minn.







# Better Selling

Richer Sales Fields for Dealers

## What's Been Happening?

This column, a review of news reported in *Croplife* in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

A U.S. Department of Agriculture survey turned up additional areas in New Jersey, Pennsylvania and New York that will need gypsy moth control measures in 1957. Plans call for from two to four times as much insecticidal spraying in 1957 as in 1956. . . Consignment selling and guaranteed merchandising sales were condemned during a session at the annual meeting of the Carolinas-Virginia Pesticide Formulators Assn. in Pinehurst, N.C.

Chemical Lime Co. of Oregon planned to build a \$1,250,000 chemical lime plant at Portland, Ore. Available lime is sufficient to supply the needs of the Pacific Northwest for the next 60 years, a company spokesman declared. Production will be 75,000 tons a year.

Grasshoppers posed a serious threat in New Mexico for 1957, on 2½ million acres of rangeland, and 196,000 acres of croplands in the state. A wide area of the state is affected in the insect threat.

The U.S. Tariff Commission reported that production of synthetic organic chemicals in 1955 was up 22% over the output of 1954. Pesticides and other organic chemicals exceeded the production of 1954 by 21%, the report said.

That unusually heavy populations of grasshoppers are present in Colorado, was found in recent surveys in the state. Some 438,000 acres of cropland were said to be infested with the insect, giving rise to predictions that next year will see major infestations. As always in making such predictions, the weather must be taken into consideration, according to Gordon Mickle, A&M College entomologist, but under conditions favorable to the development of grasshoppers, 1957 could see unusually heavy infestations.

The National Association of Commissioners, Secretaries and Directors of Agriculture met in San Francisco. The twin problems of pest eradication and the control of insecticide residues on harvested crops were covered by speakers.

Sugar beet acreages for the 1957 crop have been increased, the USDA announced. The national allotment is set at 885,000 acres as compared to 850,000 acres in 1956.

The Re-Mark Chemical Co. began a \$100,000 modernization program to increase its fertilizer output five-fold, the company said. Located at Homestead, Fla., the firm recently purchased the R. W. Brown fertilizer plant at Goulds, Fla. This new subsidiary will be known as Hurricane Fertilizer Co.

A report by the U.S. Bureau of Mines confirmed earlier reports by the American Potash Institute that production of potash was up slightly in 1955. The government report stated that consumption of potassium salts was up 4% in 1955 as compared to the previous calendar year.

The American Chemical Society was told at its 130th national meeting that if farmers would use fertilizers at levels recommended by state experiment stations, the extra income from this means would be more than government supports at 100% of parity. Dr. Russell Coleman, executive vice president, National Plant Food Institute, made the statement. Other speakers reported on tests made on various pesticides and plant foods at the Atlantic City, N.J., meeting.

Tests of aerial fertilization of forests were reported on by Rutgers University, New Brunswick, N.J. Applying a complete fertilizer on an 11-acre stand of red pine, caused the 28-year-old trees to mature more rapidly. Tests were made in cooperation with the Nitrogen Division, Allied Chemical & Dye Corp., New York. Fertilizer used was a 12-12-12 grade.

That a curtailment of shipping through the Suez Canal would not be likely to halt shipments of pyrethrum into the U.S., was the expressed opinion of USDA officials in Washington, when asked about this possibility. It was noted that since the pyrethrum flowers come from the Kenya colony and Belgian Congo areas of South Africa, that by-passing the canal would not add materially to the length of the sea-water route to the U.S.

The New England fertilizer conference held at Melvin Village, New Hampshire, brought out testimony from various speakers that the industry's future in the six New England states is promising. One economist visualized the level of fertilizer consumption reaching a plateau, but said that the ups and downs would be of a gentle type and not drastic in nature.

Massachusetts department of public health bacteriologists were making a thorough study to find possible additional insect vectors of encephalitis, or "Horse Sleeping Sickness," many cases of which have been reported in the area. Suspected mosquitoes are captured, quick frozen, pulverized, and the material then inspected under electronic microscopes.

Nitrogen was found to be the limiting factor in USDA experiments with irrigation on cotton fields. When soil fertility is low, not much of an increase in cotton yields may be obtained from extra irrigation, it was found. But with the addition of adequate amounts of nitrogen, irrigation will aid greatly in the production of cotton, the announcement said.

The Great Plains Agricultural Ammonia Conference held its meeting at Lincoln, Neb. Aug. 28-29, with 175 persons from 15 states in attendance. Speakers at the meeting emphasized that location, type of soil, rate of application, method and time of application are the most important factors to be considered in successful use of nitrogen fertilizers.

The Chemagro Corp. announced that it will build a new insecticide manufacturing plant in Kansas City at a cost of more than \$2 million. George W. Hill, Jr., president of the firm, said that a total of 50 acres of land has been set aside for present and future needs. When in operation sometime next year, the new plant will produce guthion, an organic phosphate insecticide.

## ARIZONA DEALER

(Continued from page 9)

chronically behind in their bills. It also eliminated the losses which every owner incurs when selling on a time basis.

When he changed over to city trade, he soon learned that advertising must be stepped up. He kept a careful check on various mediums of advertising, and finally decided the classified page in the daily newspaper brought the best results. Now he keeps several small ads in every issue. It may be a sale on lawn mowers, or baby chicks or garden insecticides. Usually he will run this ad for several days in succession before changing it.

"Advertising is a must in a city this big," he said. "New people are coming in every week and new houses are going up. They read the newspapers avidly, and many of them say they come to our store because they saw the ads."

With the remodeled store, he finds fewer employees are needed. Everything is attractively arranged so that a person walking in through the front door can immediately see what he wants and get it. And while Mr. Tiemann has never run a survey on the percentage of impulse buying, he says it must be high.

For instance, whenever he adds a new item, it is prominently displayed near the front of the store where no one can miss seeing it. Several times with new merchandise, he has made a half dozen sales in an hour's time.

"With a store like this, you can save much labor and employee expense," he said. "I usually keep only two part-time hands, because the customer can wait on himself. Quite often while I'm wrapping something for one customer, there is another coming to the cash register, while two more may be in different parts of the store making their own selection."

"Everything is being departmentalized now," he continued. "With the department and hardware stores selling items we once carried, I had to adopt their methods. And while I don't have as large an inventory or have as many people working for me, the profit is just as large as ever. With this type business, we are not so dependent upon farm prices and drouths. The headaches are still here, but the business is on a more stable basis. For the first time, I get a chance to relax occasionally, and that alone is worth a great deal."

## Conservation Reserve Deadline Advanced

WASHINGTON—Final date for farmers to enter into conservation reserve contracts under the soil bank for this year, 1956, has been extended from Oct. 15 to Nov. 30, 1956, the U.S. Department of Agriculture has announced.

At the same time, the department said that all conservation reserve contracts, including those for tree planting, will be limited to 10 years, except when seedling trees are not available to a participating farmer. In cases where seedlings are not available during one or more years of a conservation reserve contract, the contract may be extended at the option of the participating farmer for a like number of years. In no case may a contract be extended so as to cover a total of more than 15 years, nor beyond Dec. 31, 1974, the department said.

## Picture Gallery Proves Popular at New Mexico Store

The Mitchell Seed & Grain Co., Roswell, N.M., has developed an employee's hobby into a nice little business getter. This is a picture gallery of the store's customers, with about 200 pictures being attached to a wall near the front of the store where everyone can see them.

A few years ago one of the store's salesmen, George Goebels, became interested in photography and brought his new camera to the store. He started taking pictures of customers and then hung a few of the prints on the wall. This created so much interest that he took other pictures and wrote the name of the people at the bottom. Before long he had more than 100 pictures on the wall.

Now nearly every customer has his picture on the wall, and this picture gallery is the first thing a newcomer looks at when entering the store. When old customers die or move away, their pictures are removed while those of new customers are added.

"This picture gallery thing isn't a big thing," said owner Ervin Mitchell, "but is a nice little innovation that has created a friendly interest among customers and visitors alike. It may not have helped us sell a lot more feed and fertilizer, but every idea that brings people into the store helps. And this is one that didn't cost us anything but a little film."

## Northwest Turf Men Hear Report on Fungicide Research

PULLMAN, WASH.—Development of fungicides to control turf disease is a major research project at the Western Washington Experiment Station in Puyallup. Dr. C. J. Gould, plant pathologist at the station, reported at a regional conference of the Northwest Turf Assn., held at Washington State College here recently.

Dr. Gould said the research is seeking control measures for such turf diseases as snow mold, red thread, and fairy ring. Snow mold and red thread, he said, are the fungus infections most seriously affecting golf courses and cemeteries in Western Washington now. Fairy ring is the fungus most dominant in home lawns.

Test plots infected with snow mold at the Puyallup station and on golf courses and lawns in Western Washington, Dr. Gould said, are now being treated with mercuric, organic sulfur and cadmium compounds.

Milt Bauman, greenskeeper, Overlake Golf Club, Medina, Wash., will head the Pacific Northwest Turf Assn. for another term. Other officers elected are Don Hogan, of the H. D. Fowler Supply Co., Seattle, vice president; Henry Land, greenskeeper, Tacoma Country Club, treasurer; Dr. J. K. Patterson, WSC agronomist, Pullman, executive secretary, and Paul Brown, Lilly Seed Co., Seattle, director.

## STAUFFER APPOINTS ENGINEER

HAMMOND, IND.—Billy D. Scallorn, chemical engineer, has been appointed to the technical staff of the Stauffer Chemical Co. plant here. Mr. Scallorn was formerly located at the Fort Worth, Texas, plant of Stauffer's Consolidated Chemicals Div. He is a graduate of the University of Texas and holds a B.S. degree in chemical engineering.



## FOR WYOMING DEALER

# Complete, One-Stop Service Builds Business in Small Town

The Chester B. Brown Co. of Lingle, Wyo., is located in a village of only 450 people, yet it does a tremendous volume of business in feeds and farm chemicals. The rich farming area in the Platte River Valley extends only a mile or so across, but customers come as far as fifty miles up the valley to trade at the store.

For many years the main business was in feeds and beans, but now farm chemicals account for almost a third of the gross sales. Fertilizer has become an important item.

The bean farmers who grow about 20,000 acres of beans in the valley, are turning to a complete chemical type program. The beans must be sprayed and dusted for insects, fertilizer is used at least once a year and often put in later as side dressing, and then during the cool season the beans must be cleaned and treated when used as planting seed.

Paul Miller, manager, says his firm practically lives out in the bean fields during the season. With so many customers, Mr. Miller and some of his employees are in and out of them several times a day. He inspects crops, makes estimates of yields, listens to the farmers' problems and lines up work in spraying or dusting.

"Our biggest seller is still fertilizer," he said, "but insecticides and weed killers are gaining fast. In selling fertilizers, we've had soil samples taken and watched test plots until we know what to recommend. Being able to do this with accuracy has helped keep old customers and make new ones."

In selling insecticides, Mr. Miller bought a spraying unit and attached it to a store-owned tractor, and is now doing custom poisoning. This has been especially profitable. Many farmers do not have the equipment or know-how to handle poisonous chemicals, so they have turned this part over to Mr. Miller and his assistants.

"Another advantage," he said, "is that when we put it on, it is done right. If an inexperienced person does it and botches the job, then we get part of the blame. So we have tried extra hard to sell this service to farmers and have fairly well succeeded. We charge a nominal rate per acre for use of equipment and get retail price for the chemicals."

Mr. Miller feels that service to farmers is the foundation of the store's success. Sometimes he has had to make decisions that cost him money at the time.

One day a farmer came in and bought a large quantity of weed killers, and when he was leaving mentioned that it was to be applied with an airplane.

"Now wait a minute," Mr. Miller told him, "let's see just where you are going to put it."

Since he knew the layout of the place, he soon saw that part of the farmer's crop and that of a neighbor's might be killed from the drifting spray.

After he explained the hazard, the farmer thanked him and took only half as much weed killer as he had planned. It cost the store several dollars profit, yet the farmer was grateful for Mr. Miller's honesty, and has since become a friend and booster.

The valley is an area of diversified farming. Besides beans, farmers grow wheat, sugar beets and hay. There are also several dairy and chicken farms. All of this business is sought by the store. By handling a complete

line of feeds and medicants, Mr. Miller has worked up a good all-year business.

The store is an unusually attractive place for such a small town. It was first opened here about 16 years ago by the Chester B. Brown Co. of Scottsbluff, Neb. Mr. Miller had already spent five years in the home office, when the firm sent him to Lingle to open a branch store.

After a few years business increased so much that a larger place was needed. The company officials told Mr. Miller to draw up his own plans for the store. So with his previous experience he completely planned the new place before a single nail was driven.

It is now a model of looks and efficiency. The front part facing the busy highway has a large display room, with one corner devoted to a small open-view office. Just back of this is a supply room, and behind that but connected to it is the warehouse.

The bean room is made of concrete walls and will hold 30 car loads of beans. These can be loaded by truck or by the elevator just off to one side.

"You'd be surprised how a little planning will save steps and labor," Mr. Miller said. "Having everything just where you can find it with a minimum of effort will almost eliminate the need for one full-time employee."

Ordinarily the store keeps four employees but during the harvest season when beans are coming in, as many as twelve are kept. All hiring is done by Mr. Miller, since the head office has put him in complete charge of the store.

He must decide on putting out credit, buying merchandise, helping with advertising and planning for expansion when it is needed. Of these problems, he says credit is the biggest headache.

"We have lost very little because of bad debts," he said, "but it is a constant chore. When we find a man who isn't honest enough or maybe efficient enough to make a go of his business and pay his bills, then we try to collect without too much publicity. After that we just sort of sidestep this man and let him trade elsewhere."

The Chester B. Brown Co. is a firm believer in advertising for all their firms. This includes newspaper, radio and TV, with some direct mail advertising.

"The feed and farm chemical business is in a state of change," Mr. Miller said. "We are constantly looking for new things to sell and new ways of selling them. Also we are stocking a wider variety of products. For instance, binder twine, poultry supplies, small hardware and irrigation equipment are being carried now. Every month, it seems, we add something else. But as long as it is something the farmer needs, we try to give it to him."

## Short Courses Set by Washington State College

PULLMAN, WASH. — Three short courses of interest to the industry have been scheduled during the coming weeks by Washington State College. They are: Aerial dusting and spraying conference at Walla Walla, Wash. Oct. 30-31; weed conference, Nov. 15-16, at Pullman, and ground applicators short course at Puyallup, Wash. Nov. 29-Dec. 1.

## OVER THE COUNTER

(Continued from page 9)

better facilities, the costs can be prorated over several years. Better stores will sell more year after year, thus reducing the per dollar cost.

However, where a dealer is trying to eliminate the hiring of an extra employee by doing a full day's labor himself, the store is likely to suffer in appearance and in good management. A dealer cannot manage and also work as hard as a good employee. Planning calls for a carefully thought out operation and sales promotional program year after year. It requires follow-through.

Thinking and planning can so easily

be put off from one day to another, that there is often the temptation to say, "Oh, well this other job comes first. I can always do thinking and planning in my spare time." But somehow or other, the needed spare time never comes around.

Of course, if the dealer is satisfied to operate just an average business and get an average profit, then he may not need to plan ahead too much. But for the alert dealer who is in business to see how much he can develop it and how much money he can make, thinking and planning must come first—and work second. No man starts to walk to a certain destination without knowing where he is going, but many a man plunges right into a business and works furiously at whatever comes up, figuring that somehow or other he'll come out all right.

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to local needs

Every Stauffer Service Man is thoroughly versed in local problems!

His job is to help solve these difficulties, regardless of whether any of the complete line of Stauffer agricultural chemicals is directly concerned.

And behind every Stauffer Service Man is the Stauffer formulation know-how, to insure grower satisfaction and repeat business.

Why not investigate Stauffer now? We think you'll be impressed with what Stauffer has to offer.

**Stauffer**  
**CAPTAN**  
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**PARATHION**

(Flowable and Wettable)

and a complete line of agricultural chemicals of all types.



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Agricultural Chemicals Division

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Weslaco • North Little Rock • North Portland



# Better Selling

Richer Sales Fields for Dealers



Doing Business With

## Oscar & Pat



By AL P. NELSON  
Croplife Special Writer

A group of farmers was having a little coffee and cheese on rye sandwiches at the Grange Hall, following a meeting, and as they sat talking, the topic drifted to fall fertilization. "Yeah," said one farmer named Henry Autz, "I bought lots of fertilizers this year for plowdown. They say it pays—even the university fellers recommend it highly over spring time spreadin'."

"I bought quite a bit, too," Jim Swanson said, sipping his coffee. "Who'd you get yours from?"

"Oscar and Pat," replied Henry Autz, looking inside his bread slices to see how thick the cheese was. "I got a good price—from Pat." And he grinned.

"So did I," said Jim Swanson.

"Oscar wanted me to pay for the whole of it at once, but I just shook my head and started to walk away. If Pat hadn't come in just then, I woulda gone across the street to Felder & Co. and bought."

"That Oscar," commented Ed White, "isn't he a corker? Hear what he said to Mike Morosky the other day?"

The others shook their heads. "Well," said Ed White, "you know how Mike is, he don't change glasses too often. He's in the store and he walks up to Oscar and asks him what time it was. Oscar was busy at his desk figurin'."

"Figurin' how he can skin us," said Jim Swanson. And everyone laughed. Ed White chuckled. "Oscar and Pat got an old clock on the wall, you know. Oscar was sittin' with his

back to it. So when Mike Morosky asked Oscar what time it was, the Dutchman didn't even look up. He just jerked his thumb back over his shoulder and said, 'There's the clock. Help yourself.'"

This brought another gale of laughter. "Man, he sure wouldn't break his neck for anybody," Jim Swanson said. "But I'll bet he'll never go to the poorhouse. And the son of a gun is honest. You have to say that for him."

"Lucky for Pat that he's got a watchdog like Oscar around," Henry Autz put in. "Otherwise I'm afraid that Pat wouldn't be making so much money."

Jim Swanson chewed on his cheese sandwich. Finally, "Yeah, and Oscar is lucky he's got a fellow like Pat around to help satisfy customers. Oscar insults customers, gives 'em a

kick in the pants and then Pat comes along and smooths things over. Lots of times I've told my wife I'd never buy another nickel's worth in the store, and then all of a sudden Pat comes around, and I'm buyin' fertilizer again, and even walking into the store when I get to town."

"I like to go in there once in a while and just needle that old Oscar," put in red-headed Paul Bagstad. "Last spring I told him he musta sold me some bags of fertilizer with a gopher in one of them. I said when I got home my wife saw a gopher jump out of a bag on the truck and when I went to look there was a big round hole in the bag and the fertilizer had all run out on the road between the store and the farm."

"Oh—I bet that got Oscar mad," laughed Henry Autz.

"He sure did. His face got red and he started giving me eight and one excuses trying to prove the gopher wasn't in the bag when he sold it to me. It musta got into my truck early in the morning he said and was there when I loaded the fertilizer."

"If that had been Pat, he would have kidded you right back, and then if he saw you were serious, he would have given you a full bag to replace it."

"And taken you out for a cup of coffee and some sweet rolls," said Jim Swanson. "Funny how a farmer gets to know the guys you do business with. There are some guys in the town in business, I wouldn't go into their stores unless I had a policeman with me. I wouldn't feel safe. I'd be afraid I'd get skinned and maybe tarred to boot."

Paul Bagstad grinned. "Did any of you fellows hear what Pat went and did now?"

There was a show of interest. "What did he do?" asked Autz.

Paul Bagstad chuckled. "Well, somehow or other he got hold of an old fashioned, comfortable couch and he puts it behind a big stack of fertilizer sacks in the back of his show room."

"For Oscar to sleep on the job?" asked Autz, and they all roared at this sally.

"Maybe," said Paul Bagstad. "Pat has a big sign which says a farmer ought to have time to think once in a while. So he invites farmers to lie on that couch while their orders are being filled."

Jim Swanson grimaced. "That's just like Pat. Real considerate of him."

"Seems so," replied Paul Bagstad pouring another cup of coffee. "G. Duncan was telling me he tried out that couch one day and couldn't do any snoozin' which was what he had intended to do."

"Why not?"

Paul Bagstad chuckled. "Because Pat had so many signs hanging up around near the couch. One sign said a fellow should apply more fertilizer now instead of in spring. Save money, you know. Another sign said a farmer would get back about \$5 in extra crops for every dollar invested in fertilizer, so the time to apply it was now and get the jump on spring."

The farmers began to chuckle. "Gil said he couldn't go to sleep," he was thinkin' about those signs so much he got nervous and couldn't sleep. Finally, he got so worked up he got off the couch walked to the desk and ordered an extra ten tons of fertilizer."

Jim Swanson laughed. "Gil, should put on a pair of dark colored glasses when he lay on that couch. Then he couldn't see those signs. Some day when I ain't got nuthin' much to do I'm goin' in there with colored glasses on and lie down. And I'll really go to sleep on that couch. And if I snore, won't be polite about it, either."

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FARM SERVICE DATA  
Extension Station Reports

In a talk at Rice Field Day near ... Cal. Duane S. Mikkelsen, assistant professor of agronomy at ... told the rice growers that ... California red soils are beginning to ... phosphorus fertilizer in many ... growing areas. About 40 lb. of ... phosphoric acid per acre has ... worked well in field trials, hastening ... maturity from seven to ten days.

Growth studies of rice plants have ... shown that 2,4-D is less harmful to ... when the joints start to elongate, ... Dwight C. Finrock, superin- ... of the experiment station at ... The joints start to elongate ... usually between 60 and 70 days after ... Sedge, wiregrass, lily and ... weeds can be killed at that ... time without reducing rice yields, he ...

Soil surveys in New Mexico are ... being speeded up by the use of power ... samplers. Thomas U. Yager, ... assistant state soil scientist with the ... S. Soil Conservation Service, says ... 70,000 acres were surveyed in New ... Mexico during the first six months of ... this year.

About two thirds of the acres sur- ... veyed were on the high plains area ... along the east side. Mr. Yager says ... all survey activities in these high ... plains counties, which are part of ... the wind erosion section of the United ... States, will be stepped up in the ... future.

Under the accelerated soil survey ... program, Mr. Yager says, "It is our ... plan to complete the survey for at ... least one county or area each year." ... completed and nearing publication ... of soil survey reports for the Por- ... tales irrigated area, Curry County ... and the Bluewater area.

During late fall or early winter be- ... fore snow covers the ground is a good ... time to apply phosphate fertilizer to ... alfalfa and pasture land, according to ... Utah State Agricultural College.

Phosphate applied to the soil in the ... fall or early winter will usually be ... carried into the root zone with the ... winter and spring moisture, say col- ... lege experts. Phosphate will then be ... available to the crop in the early ... spring. This will be reflected in yield ... increases in the first cutting of al- ... falfa and will give greater economic ... returns.

Phosphate can be spread on the ... surface of the ground any time the ... farmer has free time and when the ... ground is not covered with snow. On ... fields where there is little danger of ... snow, phosphate can even be spread ... in the snow.

Land leveling has increased the ... cotton yield 20%, cut irrigation time ... half and reduced irrigation labor ... to thirds for A. L. Everett, who ... farms near Portales, N.M., according ... to M. C. Williams, Soil Conservation ... Service, Portales. Mr. Everett spent ... \$700 on the 16 acre field, or \$106 ... per acre. He moved 10,650 cubic yards ... of soil.

The payoff came when 11 acres of ... the field planted to cotton were har- ... rowed. In 1954, one of the best cot- ... ton years Portales has known, the ... field produced 680 lb. of lint to the ... acre. In 1955, Mr. Everett ginned 801 ... lb. of lint an acre on the newly-leveled ... field. The cotton sold for 31¢ a pound.

Using these figures, a conservative ... \$37.50 an acre was made due to effi- ... cient irrigation. At this rate, the cost ... of leveling and fertilizing would be ... repaid in 3 years through increased ... crop yields alone.

Some California and Arizona farm ... crops can be doubled, and in some

cases tripled, according to the Cali- ... fornia Fertilizer Assn. Not only can ... crop volume be often materially in- ... creased, but the quality can be en- ... hanced as well, according to the ... statement.

The association mentioned im- ... proved pastures and dry range as ex- ... amples, and said that when adequate ... fertilizer is properly applied, forage ... yields are not only increased by sig- ... nificant quantities, but the protein ... content is often increased by two and ... one half times. This makes for great- ... er palatability, which assures more ... meat production per acre.

In one recent demonstration, yields ... on fertilized pasture averaged 5,960 ... lb. per acre, while untreated soil pro- ... duced only 2,516 lb. The fertilized plot ... produced one and one half tons per ... acre more than the other plot. The

protein yield was 540 lb. on fertilized ... pasture and 196½ lb. on the untreat- ... ed field, an increase due to fertilizer ... use of 343½ lb.

Wilbur W. Burkhart, Washington ... County, Ore. agent, warns that farm- ... ers using grass clipping or straw to ... mulch around trees and shrubs may ... be leaving these plants open to mice ... damage this winter. He explains mice ... like ready made houses and take ad- ... vantage of mulches by setting up ... winter quarters. When the snow falls ... and the days grow cold, the mice ... don't bother to search outside for ... food. They just step-over to the near- ... est tree or shrub and gnaw off part of ... the bark for a meal. After several ... such meals and the usual holiday ... banquets, the tree has no bark left.

The calendar grid shows the following circled dates: January 5, 17, 26; February 2, 14, 23; March 1, 13, 22; April 5, 17, 26; May 3, 15, 24, 31; June 1, 18, 27; July 18, 26; August 15, 22, 31; September 5, 17, 25, 30; October 4, 11, 18, 25, 31; November 5, 17, 24, 30; December 6, 17, 24, 31. Below the calendar is a large illustration of a Du Pont URAMON fertilizer tank car, labeled 'E.I. DU PONT DE NEMOURS & CO.' and 'WILMINGTON, DEL.'.

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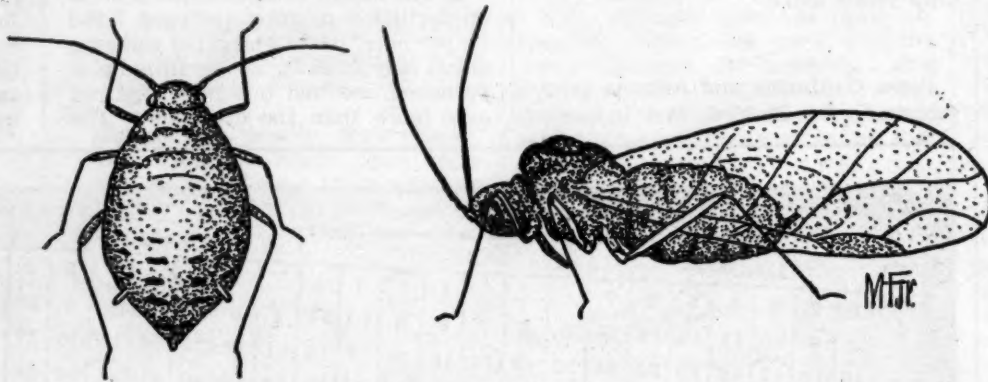
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## BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board



### Cabbage Aphid

#### How to Identify

These pests are very small in size, being frequently called "plant lice." They are usually found on cabbage plants in all stages of growth, in dense groups of whitish-green plant lice which are about the size of pinheads. The cabbage aphid, from a layman's point of view, closely resembles the turnip aphid. Entomologists, however, can distinguish between the two. Pictured above are the wingless and winged female of the species.

#### Damage Done by Cabbage Aphid

Leaves on which these clusters of aphids are found, curl badly into cup-like shapes with the inside surface covered with the sucking pests. Plants thus infested may die, or at best are dwarfed in size and produce cabbage heads unsuitable for marketing. The cabbage aphid occurs in many parts of the country where its host plants are grown. Its hosts include, in addition to cabbage, other plants of similar nature, such as cauliflower, collards, kale, turnips, Brussels sprouts and radishes.

#### Life History of the Aphid

The reproductive capacities of this aphid are truly phenomenal. One scientist, figuring on the basis of New York state conditions which allow some 16 generations of aphids between March 31 and October 2, the descendants of one female aphid, if all should live, would number in the septillions by the end of this 6-month period (1,560,000,000,000,000,000,000,000). It is pointed out that this number might be doubled in climates where a longer season is available.

Small nymphs hatching from eggs in the spring quickly attain full size, but have no wings. These are all females, called "stem-mothers," and they can reproduce young without mating. These young are also wingless and they in turn produce up to 100 active nymphs within a few weeks. Thus, several generations of aphids form a cluster about their mothers on the plant until leaves become crowded with the parasites. Subsequent generations do develop wings, enabling their owners to fly to other plants. They settle on the new host plant and begin a new series of generations. As the season draws to a close, an all-winged generation is usually produced, which includes some males whereas heretofore in the season, all were females. The winged females, termed "fall migrants," are able to get to a perennial plant where they give birth to nymphs which grow into wingless females. These in turn mate with the males of the preceding generation. These females, after having mated, lay up to four eggs in some sheltered spot on the plant and die shortly afterwards. The eggs will hatch stem-mothers to start an entirely new cycle.

#### Control Methods

Since the host plant, cabbage, is a leafy variety for human consumption, any pesticide used for control of the aphid must be applied within carefully prescribed limits, both as to timing and amounts of toxicant, in order to avoid the possibility of excessive residue at harvest. Local authorities should be consulted as to recommended methods and materials.

Drawing of Cabbage Aphids furnished Croplife through courtesy of the artist, Marvin H. Frost, Jr.

Previous "Bug of the Week" features have been reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.



## WACA MEETING

(Continued from page 1)

currents, Mr. Moore said. Visibility is poorer at these times and hazards are greater. Further, it is impossible to keep up to schedule when even these few hours a day are not always safe, Mr. Moore said.

Spraying can be performed all day, and a much greater percentage of the chemical gathers on the plants at which it is directed, he said.

An additional problem is a growing belief that insecticides are contributing to the growing smog menace. Mr. Moore reported that in Fresno, near his base of operations in Tulare, the question had been raised in a conference on the smog issue about the extent to which "drift insecticides" were contributing factors.

Mr. Moore began operating his air service in 1944 with two airplanes. Now the Tulare area is filled with as many as 50 planes as the number of chemicals increases in the war against the harmful insects.

Mr. Mather, after a tip of his hat to the agricultural chemicals industry, reported on two other complaints farmers were harboring. California crops are suffering an annual loss of \$162 millions from weeds and control measures. And they are bothered far too much by nematodes.

"Help us get rid of nematodes," they demand of the industry, "but make it cheap," is the harsh requirement they add.

The agricultural representative pointed out that the problems of crop raising and the processing of this produce cannot be divorced from one another.

The new terminology is not "agriculture" any more, Mr. Mather said, but "agri-business." The farmer buys up to 50% of his needs from business firms, as compared with only 20 to 30% only 30 years ago. And business firms take \$75 to \$90 billions of farm produce, which combined accounts for an estimated 40% of the economy of the country, Mr. Mather said.

"We are all in this together," he said, and we must understand the importance of this close relationship. "California agriculture and the agricultural chemicals industry are part of one big family."

A third speaker, Harvey O. Banks, related progress being made by the California state government to meet the state's water problems. As director of the newly formed Department of Water Resources, Mr. Banks reported on the near completion of an extended study of water and its relation to agriculture, business and the community. More than eight million dollars and 900 man years have been spent to complete a long range master plan aimed at optimum utilization of water.

"Water resources must be fully utilized to meet all water needs in the state," Mr. Banks said.

At a business session of the group, the three officers currently serving were reelected. A. F. Kirkpatrick of the American Cyanamid Co. continues in his office as president; H. M. Bales of the Arizona P. C. Co. is vice president; and C. O. Barnard continues as executive secretary and treasurer.

Newly elected members of the board of directors for 1956-57 include R. D. Eickman of the Stauffer Chemical Co., Portland, Ore.; T. S. Castle, Castle Cement Co., San Jose, Cal.; Lisle Garner, Pacific Guano Co., Berkeley, Cal.; L. S. Madsen, Olin Mathieson Chemical Corp., Phoenix.

Reelected to succeed themselves in expiring terms are C. E. Cody, California Spray Chemical Co., Richmond, Cal.; F. C. Colbern, Coastal Chemical Co., Oxnard, Cal.; and Mr. Bales.

Continuing to serve in their second year of the staggered two-year terms as directors are: Ivor R. Burden, United-Heckathorn; E. J. Davis, L. A.



**AT CALIFORNIA MEETING**—Officers of the Western Agricultural Chemicals Assn. are shown at the left, above, in a pose at the annual meeting of the association held at San Mateo, Cal., Oct. 9. From left to right are A. F. Kirkpatrick, American Cyanamid Co., president;

C. O. Barnard, executive secretary-treasurer, and H. M. Bales, Arizona P. C. Co., vice president. In the center picture is Allen Mather, executive secretary of the Agricultural Council of California, and right is Henry C. Moore, president of the Agricultural Aircraft Assn., Inc.

Chemical Co.; O. B. Hitchcock, Chemagro Corp.; J. H. Neal, Hercules Powder Co.; W. L. Piquet, Sunland

Industries, Inc.; Keith Sime, Chipman Chemical Co.; Jack White, the White Chemical Co.; and Mr. Kirk-

patrick. Mr. Barnard continues to serve as ex-officio member of the board.

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**CALSPRAY DEDICATION**—Arthur W. Mohr, right, president, California Spray-Chemical Corp., conducts J. Earl Coke, vice president, Bank of America, on a tour of Calspray's new plant food chemicals plant in Richmond, Cal. Mr. Coke, formerly assistant secretary of agriculture, was the featured speaker at plant dedication ceremonies, Oct. 9. He described the plant as a "multi-million dollar tool to help the western farmer lower his unit cost of production."

## Plant Food Production Started at New Calspray Facilities in Richmond, Cal.

RICHMOND, CAL.—Production of plant food chemicals at California Spray-Chemical Corp.'s new plant was officially started "on stream" recently with ceremonies held at plant headquarters in Richmond.

J. Earl Coke, vice president, Bank of America and former U.S. assistant secretary of agriculture, described the new plant as a "multi-million dollar tool to help the farmer lower his unit cost of production." He spoke of plant food chemicals as the greatest single aid to economic crop production that has developed in this century and prophesied that the next ten years may easily see a quadrupling of their use before potential benefits are realized.

Production capacity of the new plant is 1,375 tons of plant food products per day. Products will be marketed throughout the eleven western states.

One of the major products will be complex pelleted plant foods. At the present time, the company plans four combinations—20-20-0, 20-10-0, 14-14-14 and 16-16-18.

A second division of the Calspray operation will produce ammonium nitrate solutions for use as liquid plant foods. A third division will manufacture ammonium sulphate and a fourth will produce a calcium-ammonium nitrate solution. The company will also market anhydrous ammonia, supplied by the adjacent Standard Oil Company of California, and convert anhydrous to aqua ammonia for sale.

Arthur W. Mohr, president of California Spray-Chemical Corp., explained the reasons why Calspray, manufacturer of Ortho pesticide products, has entered the plant food field.

"Our studies disclosed a permanent and growing need for plant foods. The average grower at present is not replacing the full amount of essential plant foods that his crops are withdrawing from the soil. He must increase the use of plant foods to maintain crop quantity and quality so necessary for profitable farming.

"We found, too, that while there was sufficient western production of one or two types of plant food, approximately one-third of the total plant food used is being imported from foreign countries or shipped long distances from the middle west. A local source of supply would mean better service and would be all-important in a national emergency.

"Our survey disclosed also the need for education as to the best kind and amount of fertilizer for each crop and soil type, and the best timing and placement in order to secure optimum

results. We felt that Calspray, with its staff of experienced agronomists and its large, technically trained field force could play an important role in this educational program. The marketing of plant foods, as we have found in our comparatively small-scale experiments during the last three years, can be soundly integrated with the sale of pesticides. The two complement each other.

"And finally, through our parent company, Standard Oil Company of California, we are assured of a dependable flow of the basic materials needed to manufacture plant foods on this vastly increased scale."

For a photo description of the new Calspray facilities see page 18 of the Oct. 15 issue of Croplife.

## Industry Gifts to California School Listed

BERKELEY, CAL.—The University of California Agricultural College received a total of \$8,864.50 in August as the result of eight cash donations to the division of agricultural sciences to finance several different research projects related to the use of agricultural chemicals.

The largest single donation was from the Coachella Valley Mosquito Abatement District for research on the control of the Hippelates gnat. The district presented the division with a check for \$3,114.50.

Rohm & Haas Co. donated \$3,000 for a study relating to the control of plant diseases caused by soil fungus. This manufacturer also gave a large quantity of Kelthane W. and Kelthane emulsion for walnut insect investigation.

Shell Chemical Corp. gave \$1,000 to build tanks for new lysimeter studies in soils and plant nutrition. Kaiser Steel Corp. donated \$500 to the same project.

Agricultural Chemicals Division, Carbide and Carbon Chemicals Co. donated another \$500 for investigation on chemical control of weeds in vegetable crops. One individual donor, Mrs. Alfred Reimann, gave \$250 for general work in plant pathology.

A total of ten other companies gave a wide variety of chemicals, including both fertilizers and weed killers, to be used for agricultural research.

## GRAIN SANITATION

MOSCOW, IDAHO—A grain sanitation short course will be held at the University of Idaho here Oct. 24-25.



## WORLD REPORT

By GEORGE E. SWARBRECK  
Croplife Canadian and Overseas Editor

The government of Venezuela is backing a major project aimed at developing a chemical industry in the country; the initial accent is on fertilizer production because fertilizers are not used to the extent they should be. Last year, 35,000 metric tons were imported with a value of \$3 million.

As the new plants come into operation, it is expected that 1956 consumption will be at least 50,000 tons, while next year the target is 100,000 tons.

The site of the new chemical plants is at Moron, about 15 miles from Puerto Cabello. Moron was selected because of its proximity to a seaport, to the main sources of raw materials and to good transportation facilities by road and rail.

The first stage will include the construction of 11 plants to manufacture 150,000 tons of fertilizers a year. In a second stage, it is proposed to build plants for the manufacture of insecticides, fungicides and herbicides. Yet these are but a small part of the over-all program to establish a chemical industry.

The cost of production will show considerable savings under the cost of imported supplies, officials say. Pyrites, phosphate and limestone will come from domestic resources.

## One Plant This Year

The first fertilizer plant is expected to be in production before the end of this year with an initial daily output of 250 tons, and subject to increase later.

A pilot plant with a daily capacity of 150 tons has been operating since last year, using imported raw materials. The finished fertilizers, officials say, have been selling at half the price of imported supplies. The idea of this part of the scheme is to prepare farmers for the greater availability of fertilizers and to encourage them to increase applications.

## Rhodesian Plant

U.S. firms are being invited to invest in a project for the construction of a nitrogenous fertilizer plant in Rhodesia. The plant will supply both Rhodesia and Nyasaland.

The sponsors say that a careful study has been given to the potential consumption of nitrogenous fertilizers in the area, the availability of raw materials, estimated capital requirements, and operational costs. The demand appears to justify a production of 25,000 long tons of nitrogen a year by 1964. Ammonium sulfate would be the main fertilizer produced, though in the early stages only ammonium nitrate may be manufactured.

## Plant Starts Up

The new Canadian plant of Northwest Nitro Chemicals, Ltd., Medicine Hat, is ready to go into production.

Built at a cost of \$21.5 million the ammonium nitrate and phosphate fertilizer sections are reported to be on stream, with others to be brought into action progressively, and full production planned for the end of this year.

The company is owned by British Dominion Oil Co., and Commercial Solvents Corp., with the latter company acting as managers. Harrison & Crosfield have been appointed sales representatives. The sales area will extend over the three Canadian provinces of Manitoba, Saskatchewan, and Alberta as well as into Oregon, Washington, Idaho, Montana, North and South Dakota, Wyoming and Minnesota.

## Aussie Conference

Australian aviation interests are planning what is believed to be the world's first aviation-agriculture con-

vention. Slated for attention will be the problems of aerial fertilizer distribution and the aerial spraying of crops with fungicides and insecticides.

Universities and agricultural research bodies are being asked to cooperate in the preparation of lectures and demonstrations and there is a possibility that an exhibition will be staged at Bankstown airport, near Sydney. The hope is that the conference can be held within the next two years. If successful it will be an annual or biennial affair.

## Japanese Exports

Fertilizer export business is booming in Japan, according to trade sources. Value of sales in the year ended July 31, 1956, has been put at more than \$50 million.

Motivating the increased activity is the rising demand for nitrogenous fertilizers in China, Formosa and other southeast Asian countries.

As far as these areas are concerned, Japan is in an advantageous position price-wise, because freight charges are so much lower than those from other areas. This is an important point in view of the recent steep rises in ocean freight charges.

As demand increased, so did prices. A year ago the Formosan market was paying \$58.40 ton, f.o.b. for ammonium sulfate. This year the asking price is \$60.10.

## Briefs . . .

Nitrate production in Chile for the year ended June 30, 1956, is reported at 1,343,672 tons, compared with 1,486,782 tons in the previous year. The decrease of more than 143,000 tons is attributed to labor problems.

The new fertilizer plant of Fabrica de Fertilizantes Industriales S.A., located near Lima, Peru, is expected to come into production shortly. The plant is designed to process garbage into fertilizers. Expected daily output is 150 tons.

Research men in Western Australia are trying to make the locally-grown tobacco into as good a product as the American counterpart. They are working on the selection of more suitable fertilizers, for they think the answer lies here.

T. Williams, Eaglescliffe Chemical Co., has been appointed chairman of the British Superphosphate Manufacturers' Assn. for 1956-57. Vice chairman is H. G. Rope, Fisons, Ltd.

## GRASSLAND CONGRESS

ST. PAUL—W. M. Myers, head of the agronomy department at the University of Minnesota, will be chairman of the U.S. delegation to the seventh International Grassland Congress Nov. 6-15 at Palmerston North, New Zealand. The congress will be attended by 300 scientists from about 30 nations.





Dr. David Howe

**JOINS CSC**—Dr. David Howe, of Dallas, has joined the research development and engineering staff of Commercial Solvents Corp. as agronomist, it has been announced by Maynard C. Wheeler, vice president. Dr. Howe will make his headquarters at CSC's research laboratories at Terre Haute, Ind. He will direct his attention to the development of CSC's agricultural chemicals products, which now include anhydrous ammonia, solid ammonium nitrate fertilizer, nitrogen solutions and aqua ammonia. Dr. Howe comes to CSC from the Texas Research Foundation in Dallas where he was associate plant physiologist. Prior to this, he taught soils courses at the University of Missouri, was a county supervisor for the U.S. Department of Agriculture in Missouri, and agricultural conservationist for the same agency in Arkansas. Combat service as a navigator with the 8th air force during World War II, and a military government tour in Korea as an agricultural consultant are included in Dr. Howe's military career. He is a member of the military reserves where he holds the grade of major.

### Pacific Northwest Chemical Industry Meetings Scheduled

**PORTLAND, ORE.** — The fourth annual Pacific Northwest Agricultural Chemicals Industry Conference will be held in the Benson Hotel, Portland, Jan. 23-24, 1957, under the auspices of Western Agricultural Chemicals Assn.

The Pacific Northwest Vegetable Insect Conference and the Northwest Cooperative Spray Project will meet in the Imperial Hotel, Portland, Jan. 21-25, 1957. A joint meeting of industry representatives and scientists groups is set for Jan. 24, 1957. Registration fee for each commercial representative \$5, including one copy of each abstract of scientific papers. No registration fee is required for scientific workers outside industry. Extra copies of the abstracts are available to all registrants at \$1 per copy.

### SMUTTY WHEAT

**MANHATTAN, KANSAS**—Smutty wheat was harvested and sold in at least 43 areas in Kansas this year, it was disclosed in a survey recently completed by Claude L. King, extension plant pathologist at Kansas State College in Manhattan. Points of origin, Mr. King said, indicate that smutty wheat was spread over a wide area in Kansas with the heaviest infestation in Marion, Dickinson, Barton and Sedgwick counties. Known spots where smutty wheat originated ranged from Gray County in southwest Kansas to Johnson County in northeast Kansas and Neosho County in southeast Kansas.

## Gloomicides

It was Parents' Day at a small country school. Mrs. Smith was sitting with her eyes glued on the curtain when it suddenly rose on little Harry Jones attired in a toga. "Friends, Romans, countrymen," he declared, "lend me your ears." Leaning over her neighbor's shoulder, Mrs. Smith was heard to comment in an iron whisper, "Wouldn't be Matty Jones' boy if he wasn't borrowing something!"

★

Smith's symptoms were alarming enough to take him to a doctor for a check-up. Having fortified himself at a tavern, he went through the examination and awaited the report in the reception room. When the doctor appeared, Smith asked eagerly, "What does the report show, Doctor?"

"According to this analysis," answered the medico, "there is every indication that a small percentage of blood is getting into your alcohol system."

★

Of course the Russians have freedom of speech.

Nevertheless, the following ad appeared in one of the largest daily papers: "Talking parrot has disappeared. I want it definitely understood that I do not share its political opinions."

★

A visitor stopped in at a local club room to pass the time of day and noticed three men and a dog playing draw poker. "Sure must be a smart dog," commented the stranger.

"Naw, he ain't very smart," piped up one of the trio. "Every time he gets a good hand he wags his tail."

★

A campaigning congressman was having dinner in a restaurant one evening when a farmer went up to his table. "You're a stranger in town?"

"Yes," replied the congressman.

"Where you from?"

"Washington."

"Washington?" said the farmer. "Which Washington—tax-eatin' or tax-payin' Washington?"

★

It's easier for a girl to walk the straight-and-narrow if she's built that way.

★

An old maid is a girl who regrets that she had so much sense.

★

These days if your ship comes in it's docked by the government.

★

A newspaper held a competition for the best essay and the shortest on a typical experience with government bureaucracy. The following took first prize:

Customer at the Post Office: "May I—"

Clerk: "Next window."

★

A mild little man returned from his wife's funeral on a very windy and stormy day. He had just reached home when a tile was blown from the roof and hit him on the head. "Wow!" he muttered as he hurried inside the house, "she's in Heaven already."

★

A Mexican who entered the U.S. wanted to learn the language before he ventured about, so he got a job in the kitchen of a restaurant working there every day and sleeping nights in a room above. By careful listening to the talk around him he finally achieved a working knowledge of the language, so he quit and sallied forth. He'd been working for two years in a Greek restaurant.



William A. Sime

### Spencer Names Sales Representatives to Ohio, North Carolina

**KANSAS CITY** — The assignment of a new agricultural chemicals sales representative for Ohio and reassignment of another from Mississippi to North Carolina has been announced by Spencer Chemical Co.

The new Ohio sales representative will be William A. Sime, a native of Madison, Wis., and a 1952 graduate of Wisconsin University. Mr. Sime will make his home in Columbus. In his new position he replaces Robert Farrow, who had been Ohio sales representative for the past



Thomas L. Campbell

11 months. Prior to his new assignment, Mr. Sime was handling agricultural chemicals sales orders at Spencer's general office in Kansas City.

In a move to extend its sales activities in North Carolina, Spencer is reassigning Thomas L. Campbell there from Mississippi where he has been agricultural sales representative for the past two years. Mr. Campbell, a 1941 graduate of Alabama Polytechnic Institute at Auburn, will live in Raleigh, N.C.

Both men are married and are army veterans. Mr. Sime served from 1952 until 1954 in the Veterinary Corps. Mr. Campbell spent five years in the Quartermaster Corps and was discharged in 1945 with the rank of lieutenant colonel.

### Soil Compaction Study Under Way in California

**DAVIS, CAL.** — The University of California is beginning a four-campus attack on soil compaction—the packing down of earth to the point where it resists penetration by water, roots and farm implements, an increasing problem of agriculture.

The state-wide study involves men and facilities on four University of California campuses—Davis, Berkeley, Riverside, and Los Angeles. The committee in charge of the newly organized study estimates that about two million acres of land in pastures, fields, and orchards show compaction to the extent that yields are reduced or expenses increased. Another two million acres are approaching that condition. These estimates are thought to be conservative.

"The problem may be considered acute for a number of reasons," said Roy Bainer, agricultural engineering chairman at Davis, who has been named to head the state-wide study. "In the first place, many a farmer has observed that water penetration is slowing down in his fields, often becoming so slow that crop production is seriously affected and irrigation costs decidedly increased.

"Second, conditions that limit yields cause increasing concern as yield potentials are increased by improvements in varieties, pest control methods and fertilization procedures. Third, the physical condition of California soils has apparently been deteriorating more rapidly in recent years.

"Another factor to remember is that irrigation water is definitely limited in supply, with conservation becoming more important every year.

"At the same time, compaction seems to be aggravated by the very practices adopted for more efficient farming: more specialization in cropping, less rotation, heavier machinery and greater traffic in fields, less use of organic supplements and generally

accelerated farming operations. The problem of soil compaction will undoubtedly become worse."

Among approaches to the problem that are considered in the statewide study are:

A survey of soils where compaction exists to learn the factors that seem to have contributed to the problem; an investigation of how soils respond to different loads; an investigation of tillage machinery and irrigation systems to determine what changes might reduce compaction; an investigation of soil composition, structure, and compaction and their effect on water penetration; a study of what crops are more tolerant of compacted soils; a study of the responses of various crops to various degrees of compaction.

Professor Bainer said that poor physical condition of soils is statewide and not associated with particular soils.

### Fall Plowing, Fertilizer Raise Soybean Yields

**ST. PAUL** — Soybeans planted on fall-plowed land yielded higher than soybeans on spring-plowed land in recent tests in Mower County, Minnesota, according to A. C. Caldwell, soils scientist at the University of Minnesota. Phosphate, potash and nitrogen fertilizer also increased soybean yields.

The highest increase in soybean yields due to fertilizer was on spring plowed land, but the largest yields with and without fertilizer were on fall plowed land.

Mr. Caldwell found more and larger nitrogen nodules on the soybean plants that were supplied with potash. This was on a potash deficient soil.

### Florida Consumption

**TALLAHASSEE**—Florida fertilizer consumption during August totaled 99,117 tons, according to the Florida Department of Agriculture. This total included 63,860 tons of materials and 35,257 tons of mixed goods.



## INDUSTRY ROUND TABLE

(Continued from page 1)

monitors without recognizing it. "Any gain in ammonia take-up beyond these figures in present equipment is made at the cost of so much lost ammonia that the use of acid is often resorted to," he said. "Therefore, the trend is toward excess acid, rather than toward excess ammonia."

Inadequacy of equipment and skills in some cases has resulted in the use of as much as 75 or 80 lb. more sulfuric acid than is indicated by the ammoniation requirement alone, he said. "Under these circumstances, and in equipment that is marginal at best, it now seems probable that much of the granulation is dependent upon the use of large amounts of sulfuric acid."

Mr. Perrine then pointed out that acid serves an important function in granulation beyond those of ammonia take-up and heat. He added, however, that it can become costly to resort to great amounts of any acid to perform functions that can also be performed by mechanical equipment, low cost fuel or through the control of chemical and physical actions of the normal ingredients of the formulae.

Expanding this discussion along this line, Mr. Perrine said that granulation and drying are greatly simplified when the mass enters the dryer at 200° F. or higher, but such temperatures are difficult to reach in the ammoniation and more difficult to hold for any time with the moisture content at a desired level.

"This is a potent statement, for it justifies large amounts of ammonia and acid, it questions any delay between mixer and dryer, and endorses the new commercial practice of using steam or hot water as the source of added water," he said. "Enough steam would be required in many cases that local or state laws or insurance regulations would demand that a licensed engineer must be in attendance." Mr. Perrine described such a situation as being costly and unproductive, inasmuch as such an engineer would "have nothing to do."

Discussing the dryer further, the speaker said that some systems require that the dryer convert the wide pulsations of batch operation to continuous.

"This will reduce the effectiveness of the first 5 or 10 feet of the dryer's length," he said. Much of the effectiveness gained by continuous feed is sometimes lost through faulty delivery into the dryer, usually from air leaks, it was stated. In some cases, for reasons of economy or lack of space, no combustion chamber is provided and some portion of the mixer is used to mix the cold air with the very intense heat of the burners.

"When all of these factors prevail in the same dryer, which may also be quite short, there is not much space or capacity left to influence granulation or to hold that which may have been started elsewhere," Mr. Perrine said.

The speaker described other types of equipment, pointing out the respective features of each. One factor, described as contributing to bag setting, granule disintegration and to faulty performance in application equipment, is the practice of reducing the number of large particles in the finished product, he said.

"Most granulated fertilizers contain from 20% to 30% of its weight in large particles. The simple, direct approach of using less water to avoid forming the coarse particles usually results in excessive amounts of fine materials, which provide another source of trouble in both manufacturing and selling the final product," it was stated.

"Changing technology in granulation and ammoniation" was the subject discussed by T. P. Hignett,

Tennessee Valley Authority, Wilson Dam, Ala., in his talk on Oct. 17. Illustrating his remarks by charts and slides projected on the screen, Mr. Hignett described the chemical processes that cause caking in fertilizer products.

Poor physical condition of fertilizer granules, he said, often results from a too-high moisture content, from insufficient airing in manufacture or poor ammoniation. He showed on the screen micro-photos of granules that were bonded together, showing clearly the growth of crystals on the surface of the granule, causing it to cling to other particles.

Mr. Hignett reviewed a number of the ammoniation and granulation studies conducted by TVA during the past several years, and brought his audience up to date on current activities in pilot plant work there.

The physical and chemical properties of raw materials used in processing granular fertilizers were discussed by representatives of the industry and of the U.S. Department of Agriculture.

J. O. Hardesty, USDA, talked on the particle size effect of potassium chloride on the processing of granular mixed fertilizers. He said that potassium chloride in some types of mixed fertilizers appears to resist agglomeration with other ingredients during the granulation process. This difficulty is less apparent in high-nitrogen than in low-nitrogen mixtures, he said.

"High concentration of salts, such as ammonium nitrate or urea, in the solution phase is characteristic of high-nitrogen mixtures and is one of the most important conditions favoring agglomeration of potassium chloride with other ingredients of the mixture," Dr. Hardesty said.

"Such high-nitrogen mixtures as 8-16-16 and 10-10-10 usually can be granulated without difficulty. On the other hand, low-nitrogen, high-potash mixtures, such as 4-16-16 and 5-20-20, are often difficult to granulate."

This is largely because the low proportion of nitrogen in such mixtures does not permit the use of sufficient amounts of highly-soluble nitrogen carriers, the USDA scientist declared. He added that these mixtures may have inadequate plasticity owing to low concentration of salts in the solution phase.

"As a result, the potassium chloride complement of the mixture, which

is the least amenable to agglomeration of any of the materials present, is not fully incorporated in the granule," Dr. Hardesty said. "Thus, a considerable proportion of it appears as individual particles of potassium chloride in the granular product."

Dr. Hardesty said that when the potassium chloride in a 5-20-20 mixture is finely divided, a high proportion of potassium chloride tends to accumulate as fines in the granulator product during processing. This often causes excessive recycle loads and interferes with the production of on-size products, he said.

When the potassium chloride in the initial mixture is composed of coarse granular material, a high proportion of the individual granules of this salt accumulates in the on-size fraction of the product, allowing possible segregation and poor nutrient distribution. Dr. Hardesty added that when the potassium chloride in the initial mixture is composed of medium-sized granules (92% in the range of 10 to 35 mesh) the quantity of fines, or recycle material, obtained during processing is reduced appreciably. Plant nutrient distribution in the on-size product is fairly uniform.

Dr. Hardesty concluded by saying that industry observations and results of laboratory tests indicate that granular potassium chloride, intended for use in fertilizer mixtures to reduce the amount of recycle fine fractions in the granulated product, preferably should pass a 10-mesh screen.

The role of potash in the processing of granular fertilizers was discussed by Richard D. Tayloe, National Potash Co., New York. He pointed out that although customer acceptance of granular fertilizers, particularly in the Midwest, had spurred the progress of this type of manufacturing, other considerations are also a factor.

Three important properties of good fertilizer, he said, include freedom from caking and lumpiness, uniformity and ease of distribution and uniformity of composition and lack of segregation. These are met largely by granulation, although there are some pulverized materials that meet these requirements, Mr. Tayloe said.

"The physical nature of the raw materials is largely responsible for the compliance of the product with the three basic requirements," he said. "Leaving aside consideration of the plant nutrient value for the moment, there are three classes of raw materials. These are liquids, including salts which are in solution during the granulation cycle, solids

which promote granulation and inert materials, solids which do not aid the granulation.

"The granule, as originally formed, consists of a pellet of granulation promoting material, permeated with the liquid phase and containing bits and pieces of the inert material like the peanuts in a bar of chocolate. There is little or no penetration of the inert particles by the other materials.

"Ammonium sulfate, muriate of potash and other undissolved salts with some dense superphosphate granules and inert filler, make up the materials which are inert from the standpoint of granulation. These materials must be gathered up and held in place by the plastic materials, and each particle must be substantially surrounded by the binder if the granule is to have the proper particle strength. This in turn means that the total surface area of the inert material must be low enough so there is enough binder to go around.

"This relationship of inert to binder cannot be reduced to a numeric ratio or index; and one face of a potash particle may serve as part of the granule face, requiring no binder. At any rate, the surface covering ability of a paste is a rather intangible thing. But in other words, to build a brick wall, you must have enough mortar to hold the bricks together. Following this illustration step further, every time you break a brick in two, you need more mortar for the additional joint. This is why the particle size of the inert material is important in granulation.

"While ammonium sulfate has caused its share of trouble in granulation, the problem is not as acute as with other salts because of the greater solubility of this salt, and even more, because other nitrogen carriers are available which have higher nitrogen content and are less troublesome to granulate. I should think, though, that the remarks of the effect of particle size should apply to this salt as much as to muriate of potash.

"At any rate the difficulty of granulating with ammonium sulfate has been met largely by changing to other nitrogen carriers. This solution is not available for the troubles caused by potash, as practically there are no other carriers of potassium.

"It has been demonstrated that increasing the potash particle size does help the efficiency of granulation, particularly in high potash grades. The extent to which it aids is dependent to a considerable degree upon the efficiency of the ammoniator and the preceding equipment such as mixers. The more positive the mixing action, the less the effectiveness of coarse potash relative to fine potash.

"Until recently, knowing this has not helped too much, as the supply of coarse or granulated potash has been limited, and the granulated potash was too coarse and more costly. This situation has now been pretty well corrected, and sized grades designed specifically for use in granulation are available from several companies.

"The use of a coarser material to aid in granulation raises another question, however, and that is, 'how coarse?' The answer to this is that the coarsest particle of potash must be finer by a considerable amount than the coarsest particle of fertilizer, and the finest potash particle should be somewhat finer than the finest fertilizer particle.

"This will permit the inclusion of all the fertilizer granules of sufficient potash to give a fairly uniform analysis for all size fractions. This is the meaning of the requirement of a good granulated fertilizer that it be uniform in composition.

"While the actual range is within limits a fairly arbitrary matter, I don't think too many people will disagree that the distribution within



SWORN INTO GOVERNMENT POSITION—Vern I. McCarthy, Jr., right, vice president of Vulcan Containers, Inc., Bellwood, Ill., is sworn in for his six months' assignment with the Business and Defense Services Administration in a recent ceremony. Administering the oath is Charles F. Honeywell, BDSA administrator. Mr. McCarthy will represent the American packaging and container industry in his capacity as deputy director of the containers and packaging division of the agency. His company, Vulcan Containers, manufactures steel shipping containers and tin cans.



the limits would roughly parallel the distribution of the fertilizer size itself. Also there should be a fairly clean cutoff at the fine end, somewhere about 30 mesh, perhaps 35 mesh, so the potash grains will for the most part act as seeds of nuclei for the fertilizer granules to grow on.

"The use of raw materials of the proper particle size is necessary if the process is to be successful. While there is more to granulation than merely this, the proper choice of raw materials is an essential starting point. This, and an awareness of just why you are granulating, will go far toward insuring you an acceptable, marketable product."

W. L. Hill, USDA, discussed the role of phosphorus in the granulation process. He prefaced his remarks by stating that the role of phosphorus in granulation is not different than it is in the manufacture of pulverized types of plant food.

Dr. Hill observed that fertilizer technologists should not overlook the end use of the products, reminding that the purpose of these materials is for the enhancement of plant growth. In the process of crop production, he said, plant response is based upon the reaction pattern between the fertilizer and the soil. "Fertilizer technology can provide exactly what the plants need for nutrition," he said.

Calcium and sulfur, he said, should not be regarded as "secondary" elements. On the contrary, he described them as being important factors in plant nutrition.

The speaker spent a considerable portion of his time in discussing the solubility of nutrient-bearing substances, nitrogen, phosphorus and potash, declaring that this property determines the rate of speed with which plant foods become available.

Dr. Hill said that the fertilizer industry must become more specific in its manufacture of plant food. In the making of high analysis products, he said, calcium is "squeezed out," which results in mediocre growth responses on the part of crops fertilized by such materials under certain conditions.

The process of granulation slows down the water soluble properties of phosphorus, Dr. Hill said, and this fact may be regarded as either good or bad, depending upon the needs of the crop involved.

The afternoon program Oct. 17, comprised an educational review of equipment available to the fertilizer manufacturer for granulation, dust and fume control, temperature control, feeders and weigh belts, electrical automation, dryer design and screen analysis information.

Representatives of a number of firms offering such equipment presented this information. Companies and products thus mentioned included Sackett's New Star granulator; Flowraters and flow control, Fisher Porter Co.; temperature control in granulation, Minneapolis-Honeywell Regulator Co.; feeders, weigh belts, Wallace & Tiernan Inc.; electrical automation, Link Belt Co.; instrumentation in dryer design, Louisville Dryer Co.; and screen analysis, W. S. Tyler Co.

The Oct. 18 session saw a continuation of the presentation of new devices, including a panel discussion on bags and bagging. Bag topics were discussed by J. M. McDonald, Bemis Bro. Bag Co.; K. A. Arnold, St. Regis Paper Co.; W. Jacobi, Union Bag & Paper Corp., and O. W. McDuffie, International Paper Co.

The program called for further discussion of machines and devices for fertilizer manufacturing. The morning program was to include a discussion of the Dorr ammonium phosphate process, by Mack Barber, plant foods division of Missouri Farmers Assn.; the granulation process, as at Davison's Trenton plant, by J. E. Reynolds, Davison Chemical Co., division, W. R. Grace & Co.;

dust and fume control in granulation, by Glen Rose, Davison Chemical Co.; fans and dust cyclone design, by a representative of American Blower Co.; methods for collecting fumes and dust samples by J. Gaskill, Mine Safety Appliances Co., and a paper, "Controlling Caking and Granulated Fertilizers," by Edmund P. Hudson, Scottish Agricultural Industries, Aberdeen, Scotland.

Three talks on aids in selecting types and principles were on the program for the final afternoon, Oct. 18. "Counter Current Drying of Drying Straight Tube" was to be discussed by a representative of Smith-Douglass Co., Inc.; "Concurrent Drying With a Dehydromat," by D. Leister, Renneburg & Sons; and "Concurrent Drying Straight Tube," by F. T. Nielsson, International Minerals & Chemical Corp.

## Thompson Chemical Personnel Visits Research Projects

ST. LOUIS—Management, sales and research personnel of Thompson Chemical Corp., St. Louis and Los Angeles, recently toured three company-owned research projects at Rolla, Mo., Branson, Mo., and Harrison, Ark. They checked on results obtained by the firm's chemical killers for weed and brush control.

At present, three research projects are under way on the 6,000 acres owned by the firm.

At Rolla the principal project is related to experimental right-of-way brush control. The Thompson acreage at Branson is devoted to experiments in brush control for grazing. The experimental area at Harrison has been set aside by the Thompson company for brush control for pine growth development.

Each of the areas was subjected to carefully measured and scientifically applied chemical spraying. Not only have the various chemical formulas been accurately recorded and checked, but also each method of spraying, from small hand sprays up to and including airplane sprayers, has been made a case history.

Tabulation of the reports on results obtained is now under way in the Thompson research laboratories at each of the projects and in St. Louis. The findings will be announced soon and complete reports will be made available by the firm to any individual or organization interested.



G. A. Gilbertson

**HOUGH OFFICERS**—At a special meeting of the board of directors of the Frank G. Hough Co., Libertyville, Ill., a subsidiary of International Harvester Co., Frank G. Hough, founder and president of the company, was elected to the newly created office of chairman of the board of directors. G. A. Gilbertson, formerly executive vice president and general manager, was elected president and chief operating officer.

## Verticillium Wilt Battle Under Way at Arkansas Station

BLYTHERVILLE, ARK.—A battle against that scourge of cotton—verticillium wilt—is taking place on the University of Arkansas' research station at Nodena, in northeast Arkansas.

The Nodena station is probably the world's largest verticillium research center and one of the world's largest cotton rotation studies is carried on there.

"Verticillium wilt is about the only thing we see right now which could cause this area to have a real crop failure," J. E. Jacks, assistant agronomist in charge of the research station, says.

Verticillium wilt is a fungus that is always present in the soil. Cool, damp weather causes it to attack the cotton plant. It grows right up through the plant's lifeline, the thin area lying just under the outer bark, choking it and depriving the plant of nutrition and water.

It was back in 1950 that "vert wilt" took its big toll in Mississippi County, which is greatly dependent on cotton for its economic well-being. The growing season was a cool and damp one and wilt wiped out about half the county's multi-million dollar crop.

The next year the university began its wilt study to find ways to combat the disease.

Some of the research has produced interesting results. For example, one of the many experiments being carried on involves soil fumigation. Mr. Jacks says complete fumigation of a couple of test rows resulted in an increase equal to 600 lb. of seed cotton to the acre.

An obstacle to this method in large-scale farming is its cost, Mr. Jacks says. Is there some way to make this treatment practical for the farmer? It will take a lot more testing to answer that, possibly five to 10 years, he said.

Next year Mr. Jacks and his associates are going to treat soil with a number of different chemicals, each known to attack a special growth-deterrent factor.

The Nodena researchers have already come up with some answers to verticillium wilt. For instance, the tests have proved rather definitely that deep cultivation leads to more wilt. So the station recommends a shallower "bite" in cultivation.

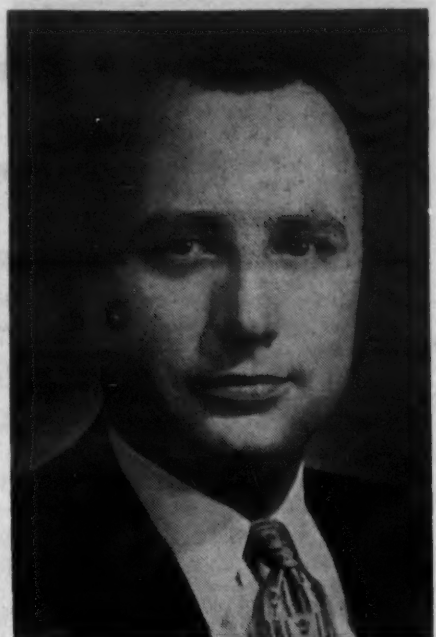
The Mississippi County Farm Bureau, which was instrumental in establishing the test plot, underwrites the rent on the land. The Farm Bureau uses income from the crops to pay the rent. In the event of a crop failure, it would have to stand any loss.

## Sulfur Production

WASHINGTON—The domestic sulfur industry produced 621,130 long tons of native sulfur and 43,400 tons of recovered sulfur (of a purity of 97% or greater) during July, according to reports of producers to the Bureau of Mines. Producers' stocks of native sulfur increased slightly over the previous month and at the end of July totaled 3,493,942 tons.

## GRASS DISEASE RESEARCH

BROOKINGS, S.D.—Research is under way at South Dakota State College to control destructive diseases that frequently cause poor stands in forage and range grasses, according to C. J. Mankin, associate plant pathologist. The research is aimed at controlling such diseases as seedling blight, which causes poor stands; smuts and ergots, which destroy the seed; root rots, which seriously reduce yields and vigor of the plants and leaf diseases.



Richard G. Powell

## Richard G. Powell In New Mississippi River Chemical Post

ST. LOUIS—The promotion of Richard G. Powell to director of technical services has been announced by John L. Sanders, sales manager, Mississippi River Chemical Co., a division of Mississippi River Fuel Corp., St. Louis, Mo.

Mr. Powell, who was formerly technical service representative, will direct the activities of the department in association with Bradley & Baker, distributors of the agricultural products produced by Mississippi River Chemical Co.

Mr. Powell served in the navy during World War II. He holds a B.S. degree in chemical engineering from Iowa State College.

## South Carolina Tonnage Gains in Third Quarter

CLEMSON, S.C.—Fertilizer sales in South Carolina during the quarter ended Sept. 30 totaled 43,019 tons, a 4.02% gain over 41,255 tons during the corresponding quarter in 1955, according to B. D. Cloaninger, director of the State Department of Fertilizer Inspection and Analysis. Included in the tonnage for the 1956 quarter were 27,843 tons of mixed goods and 15,176 tons of materials.

## Soil Testing Facilities

FARGO, N.D.—Better laboratory facilities have been developed at North Dakota Agricultural College to serve the increasing number of farmers in North Dakota who want soil samples tested. Laboratory and other facilities have been improved to the extent that it is no longer necessary to limit the number of tests run for any farmer, says Dr. E. B. Norum, soil scientist at NDAC. A reduction in the service charge per sample to \$1 is announced. The laboratory is under the supervision of Armand Bauer, assistant soil scientist. The NDAC soils department has provided soil testing service on a limited basis since 1953. In two years up to June 30, 1955, over 4,000 samples were tested. For the year ending June 30, 1956, the number of samples handled increased to nearly 3,000.

## QUOTE

"To replace the nitrogen, phosphorus and potassium removed annually in the production and sale of crops, livestock and livestock products from the farms of Oklahoma would require the equivalent of 409,000 tons of ammonium nitrate, 277,000 tons of superphosphate and 114,000 tons of muriate potash."—From "Our Soil and Its Care," published by Oklahoma A&M College.



# Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Western states.

## Federal Trade Commissioner Discusses Advertising Copy

The attitude of the Federal Trade Commission toward business is regarded with varied emotions by different industries and individuals within these industries depending usually upon whether the commission has had occasion to interfere with the person's operations.

In a recent talk before the New Jersey fertilizer conference at Rutgers University, Sigurd Anderson, commissioner of the Federal Trade Commission told about some of the experiences his organization has had with advertising copy published by firms operating on the fringe of the fertilizer and soil conditioner industries, directed at audiences consisting mostly of urban back-yard gardeners.

In fairness to the fertilizer and soil conditioner industries, however, Mr. Anderson commended the trades as having good "clean advertising" records as a whole.

Examples of advertising of fertilizer and soil conditioner products requiring FTC attention were cited by the commissioner in his talk. These should be of interest to Croplife readers; not that anyone is figuring on publishing such claims in their advertising, but just for information on the general type of claim which Mr. Anderson said attracts the attention of FTC.

Here are some of the examples recited by the commissioner:

That the product advertised contains all of the known trace elements necessary for the growth, production or feeding of trees or plants and also the vitamins necessary for the growth, production or feeding of plants and trees;

That application of the product will cause plants to grow under any circumstances other than the lack of fertilizer;

That other fertilizers or plant foods will not produce as satisfactory results as this product;

That the dipping of trees, shrubs or plants in the product before planting will assure growth;

That plants given up for dead will be saved by applying the product, except in the case of plants that can be saved through the application of a fertilizer;

That dry fertilizers do not provide a balanced diet to plants;

That a fertilizer must be applied in liquid form in order that plants may utilize the ingredients;

That this product makes other fertilizing methods obsolete;

That this product causes grass to germinate in a shorter time than all other commercial fertilizers;

That the application of product will not burn plants if expressly limited to its use as directed;

That product costs less than other commercial fertilizers;

That one pound of product makes . . . . pounds of liquid fertilizer (greatly exaggerated);

That all of the ingredients in a solution of product are absorbed when sprayed on foliage or that the foliage of all plants will absorb significant amounts of the solution;

That product contains all the vitamins necessary for human or animal life and that the consumption of food produced on soil to which said product has been applied will help overcome vitamin deficiencies because of such application;

That in the use of product generally in the raising of flowers, fruit or berries, results can be obtained equal to those of professional growers;

That product will change soil texture or change the clay, sand, silt ratio of soil or add to the soil elements other than those contained in product;

That product will effectively form and stabilize soil aggregates, without revealing

the extent to which the soil must be cultivated or the degree to which the product must be worked into the soil to effect the formation and stabilization of soil aggregates to the extent represented to result from the use of said product;

That said product contains a soil penetrant when such is not the fact;

That said product will produce an even lawn; make lawn mowing unnecessary; make grass greener, thicker, and more luxurious;

That product is safe or will not adversely affect the appearance of a lawn;

That product is the scientific designation of a plant food;

That said product is a new plant food or a new discovery and that it was developed as a result of atomic research;

That personnel identified with educational institutions or governmental agencies have made photographs showing the results obtained from use of such product when such is not the case;

That product contains radioactive materials and that the use of product by sprinkling and without any other factors will assure an abundance of flowers or vegetables on a small patch of ground;

That the ingredients of product are absorbed by the leaves within a few minutes after application, which is contrary to fact;

That it takes too long for dry fertilizers to produce results;

That product is tremendously powerful and far exceeding any other fertilizers available;

That said product is much cheaper than any other fertilizer;

That there are vitamins and hormones contained in said product which will aid plant growth; That other fertilizers will injure plants;

That the nutrients of product are absorbed much faster and more efficiently through the leaves than through the roots and that leaf feeding is superior to root feeding; and

That the product is a new plant food or substantially different from other liquid fertilizers on the market when such is not the fact.

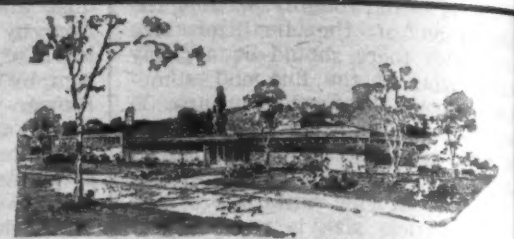
It is evident that many of the claims enumerated by Mr. Anderson are of the type that appeal to persons interested in gardens, lawns and flowers, rather than full-time commercial farmers.

Not all of the above claims made in advertisements strike us as being completely off base, but at the same time, they do serve as warnings that copy written with careless reference to fact, is skating on pretty thin ice so far as the Federal Trade Commission is concerned.

Probably the best way to keep government agencies from interfering in business, is for the firms involved, like the overwhelming majority of those engaged in selling fertilizers and pesticides, to keep their houses in order from top to bottom.

A recent quotation in "Dun's Review" seems to cover the situation quite well. It points out that "as businesses engage in predatory and unethical practices, inevitable and compensating legal controls are generated. Conversely, as industries voluntarily assume sound ethical standards, there is a relaxation in regulations affecting their economic life.

"Protective legislation by the government in recent years has been merely the result of abuses and breaches of ethical awareness. The only way to prevent further inroads by government is for business itself to assume a greater ethical responsibility. . . . The trade association is the instrumentality that can best build up ethical standards of self-control, see they are adhered to, and plead business' cause before government."



## Croplife



Member of Business Publications Audit



Member of National Business Publications

CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is \$5 for one year (\$8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG

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DONALD NETH

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EASTERN STATES—Paul L. Dittmore, Eastern Advertising Sales Manager; George W. Potts, New York Office Manager; Suite 3214, 551 Fifth Ave., New York 17, N.Y. (Tel. Murray Hill 2-2185).

CENTRAL STATES—Don E. Rogers, Manager; Henry S. French, Assistant Manager; 2272 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-6782).

SOUTHWEST—Martin E. Newell, Manager; James W. Miller, Assistant Manager; 612 Board of Trade Bldg., Kansas City 5, Mo. (Tel. Victor 2-1350).

NORTHWEST—Paul A. Anderson, Advertising Sales Representative, P.O. Box 67, Minneapolis 1, Minn. (Tel. Federal 2-0575).

WASHINGTON CORRESPONDENT—John Cipperly, 604 Hibbs Bldg., Washington, D. C. (Tel. Republic 7-8534).

EXECUTIVE AND EDITORIAL OFFICES—2501 Wayzata Blvd., Minneapolis, Minn. Tel. Federal 2-0575. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D.C. (WA 82).

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# MEETING MEMOS

- Oct. 22-23—Fertilizer Section, National Safety Council, La Salle Hotel, Chicago, Ill.; Curtis A. Cox, Virginia-Carolinas Chemical Corp., Richmond, Va., chairman.
- Oct. 23-24—Pacific Northwest Garden Supply Trade Show, Shrine Auditorium, Portland, Ore.
- Oct. 24—Central California Agricultural Forum, Bakersfield Inn, Bakersfield, Cal.; David N. Wright, Box 791, Bakersfield, Secretary.
- Oct. 25—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Beers, Executive Secretary, 228 N. La Salle St., Chicago 1, Ill.
- Oct. 30-31—Washington State College Aerial Dusting and Spraying Conference, Walla Walla, Wash.
- Nov. 1-3—Annual Aerial Applicators Conference of National Aviation Trades Assn., Chase Hotel, St. Louis, Mo. Charles A. Parker, Executive Director, 1346 Connecticut Ave., Washington 6, D.C.
- Nov. 2—Southern Soil Fertility Conference, Atlanta-Biltmore Hotel, Atlanta, Ga.
- Nov. 7-9—Agricultural Ammonia Institute, Annual Convention, Atlanta Biltmore Hotel, Atlanta, Ga.; Jack F. Criswell, Claridge Hotel, Memphis, executive vice president.
- Nov. 7-9—Pacific Northwest Plant Food Assn., Annual Convention, Harrison Hot Springs Hotel, Harrison Hot Springs, British Columbia, Leon S. Jackson, Lewis Bldg., Portland, Ore., secretary.
- Nov. 8—Ninth Annual Fertilizer Dealers Short Course, Iowa State College, Ames, Iowa.
- Nov. 9—Session for Fertilizer Industry, South Carolina Accident Prevention Conference, Jefferson Hotel, Columbia, S.C.
- Nov. 11-13—California Fertilizer Assn., 33rd annual convention, Del Coronado Hotel, Coronado, Cal.; Sidney H. Bierly, executive secretary, 475 Huntington Drive, San Marino 9, Cal.
- Nov. 13-15—18th Annual New York State Insecticide and Fungicide Conference and 9th Annual Pesticide Application Equipment Conference, Bibbins Hall, Cornell University, Ithaca, N.Y.
- Nov. 15-16—Washington State College Weed Conference, Pullman, Wash.
- Nov. 19-20—Eastern Branch, Entomological Society of America, Hotel Haddon Hall, Atlantic City, N. J.; B. F. Driggers, Rutgers University, New Brunswick, N.J., secretary.
- Nov. 19-20—Ohio Pesticide Institute winter meeting, Neal House, Columbus, Ohio.
- Nov. 27-28—Indiana Fertilizer Conference, Memorial Union, Purdue University, Lafayette, Ind.
- Nov. 28—Oklahoma Fertilizer Dealers Conference, Sponsored by the Oklahoma Plant Food Educational Society, Oklahoma A&M College, Stillwater.
- Nov. 29—Oklahoma Soils and Crops Conference, Oklahoma A&M College, Stillwater.
- Nov. 29—New Jersey Pesticide Dealers Conference, Rutgers University, New Brunswick, N.J.
- Nov. 29-Dec. 1—Washington State College Ground Applicators Short Course, Puyallup, Wash.
- Dec. 6-7—Alabama Soil Fertility Society, Whitley Hotel, Montgomery, Ala.
- Dec. 10-12—13th Annual North Central Weed Control Conference, Sherman Hotel, Chicago.
- Dec. 13-14—Soil Fertility and Plant

Nutrition Short Course, University of Missouri, Columbia, Mo.

Dec. 13-14—Cotton Production Conference, The Titwiler, Birmingham, Ala.

Dec. 12—American Society of Agricultural Engineers, Power and Machinery Section, in Cooperation with the National Joint Committee on Fertilizer Application, Edgewater Beach Hotel, Chicago.

Dec. 27-31—Entomological Society of America, Annual Meeting, Hotel New Yorker, New York City.

1957

Jan. 8-9—Texas Fertilizer Conference, Texas A&M, College Station, Texas.

Jan. 10-12—Northeastern Weed Control Conference, McAlpin Hotel, New York.

Jan. 21-25—Pacific Northwest Vegetable Insect Conference and Northwest Cooperative Spray Project, Imperial Hotel, Portland, Ore.

Jan. 23-24—Fourth Annual Pacific Northwest Agricultural Chemicals Industry Conference, Benson Hotel, Portland, Ore., Sponsored by Western Agricultural Chemicals Assn., C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Executive Secretary.

Jan. 23-25—Southern Weed Conference, Bon Air Hotel, Augusta, Ga.; Walter K. Porter, Jr., Agricultural Experiment Station, Louisiana State University, Baton Rouge, secretary.

Jan. 28-29—National Cotton Council of America, Annual Meeting, St. Louis, Mo.

Jan. 31-Feb. 1-2—Agricultural Aircraft Assn., Annual Convention, Senator Hotel, Sacramento, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Executive Secretary.

Feb. 4-6—Cotton States Branch, Entomological Society of America, Birmingham, Ala. W. G. Eden, secretary-treasurer, Alabama Polytechnic Institute, Auburn, Ala.

June 17-19—Fifteenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Dinkler-Tutwiler Hotel, Birmingham, Ala.; Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 26-28—Eighth Annual Fertilizer Conference of the Pacific Northwest, Benson Hotel, Portland, Ore. B. R. Bertramson, Washington State College, Pullman, Wash., chairman.

July 17-19—Southwestern Fertilizer Conference and Grade Hearing, Galvaz Hotel, Galveston, Texas.

Nov. 7—Fertilizer Manufacturers Conference, Iowa State College, Ames, Iowa.

Nov. 8—Technical Session on Phosphate Fertilizer Manufacture, at Midwest Regional Meeting of Chemical Engineering Section, American Chemical Society, Iowa State College, Ames, Iowa.

Dec. 3—Sixth Annual Minnesota Soils and Fertilizer Short Course, Coffey Hall Auditorium, St. Paul Campus, University of Minnesota.

## DEFOLIATION GUIDE

LOS ANGELES—A new guide to cotton defoliation from the division of agricultural Sciences of the University of California is now available. Authors of the publications are Dr. Frederick Addicott of the department of botany, Los Angeles campus, and G. J. Harrison, V. T. Walwood, and Marvin Hoover of the U.S. Cotton Field Station, Shafter, Cal.

## St. Regis Paper Makes Personnel Changes

NEW YORK—St. Regis Paper Co. has announced several personnel changes in the eastern and midwestern districts of its multiwall packaging division.

W. H. Versfelt, Jr., and W. T. Orr have been named regional sales managers in the eastern district and will have their headquarters at the New York office. Mr. Versfelt, who was formerly located in Baltimore, will supervise branch offices at Ocala, Fla.; Atlanta, Ga.; Baltimore and part of New York metropolitan sales. Mr. Orr will supervise the branch offices at Allentown, Pa.; Buffalo, N.Y.; and Boston, Mass., and part of New York metropolitan sales.

H. W. Walker has been named regional sales manager of the eastern area of the midwestern district, consisting of Detroit, Cleveland, Pittsburgh, Cincinnati and Louisville, with headquarters in Chicago. Mr. Walker was previously regional sales manager of the Texas-Oklahoma-Arkansas area with headquarters at Dallas.

L. E. Gjovig has been named manager of engineering for the consolidated eastern district of the multiwall packaging division, with headquarters at the New York office.

W. A. Harris has been named sales supervisor for the Chicago area with headquarters at the Chicago office.

R. P. Quinlan has been transferred from metropolitan sales in New York to the post of branch manager at Louisville, in the midwestern district.

C. E. Freeman has been named branch manager in Dallas. Mr. Freeman was previously branch manager of the St. Louis office.

D. H. Hundley has been named branch manager in St. Louis, succeeding Mr. Freeman. Mr. Hundley was previously branch manager of the Louisville office.

## Crop Dusting Firm Plans Expansion

SACRAMENTO—Crop Care, Inc., a Sacramento area crop dusting firm, has been authorized by the state securities commissioner to sell 150,000 shares of stock at \$2 par value.

The company was incorporated in January with an authorized capital of \$1,000,000 after acquiring the operating assets of Branstetter Flying Service, Inc., of North Sacramento.

Operations include cropdusting, spraying and seeding in the Sacramento Valley. Future plans call for expanding operations into the San Joaquin Valley.

## Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of \$9 per column inch.

All Want Ads cash with order.

## HELP WANTED

WANTED SALESMAN—EXCELLENT OPPORTUNITY for aggressive man to work fertilizer trade in north central Illinois. Address Ad No. 2101, Croplife, 141 Jackson Blvd., Chicago 4, Ill.

SALES OPPORTUNITY — TERRITORY open N. E. Wisconsin about 15 counties for fertilizer salesman to represent established, old line manufacturer calling on established accounts. Age 23-35. Farm background or knowledge. Sales experience desirable, not required. Salary, bonus, expenses, car furnished. Reply stating age, qualifications, salary, references, previous experience. Address Ad No. 2115, Croplife, 141 W. Jackson Blvd., Chicago 4, Ill.

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## CLASSIFIED ADVERTISING

## Southern Control Officials Plan Meeting

LEXINGTON, KY.—The fifteenth annual convention of the Association of Southern Feed and Fertilizer Control Officials will be held next June 17-19 at the Dinkler-Tutwiler Hotel in Birmingham, Ala., according to an announcement by Bruce Poundstone, Kentucky Agricultural Experiment Station, secretary-treasurer.

Persons planning on attending should make their own reservations directly with the hotel. Suggestions concerning the program should be sent to Mr. Poundstone; R. W. Ludwick, Box 366, State College, N.M., association president; or B. D. Cloaninger, Drawer 392, Clemson, S.C., chairman of the executive committee.

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there is only

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NEWSPAPER



## Serving the Agricultural Chemical Industry ...

Croplife is the weekly newspaper for all phases of the industry from the manufacturers of basic chemicals down the production and distribution chain through the retail dealers. Croplife reaches *all* the key men in the industry. These groups are reading Croplife:

- Fertilizer manufacturers, mixers and suppliers of fertilizer ingredients
- Formulators of Pesticides, Herbicides and other Farm Chemicals
- Retail Dealers selling fertilizer, farm chemicals and other farm supplies; Custom Sprayers, Pest Control Operators, and Nurserymen
- Farm Advisor Group—county agents, agriculture department officials, extension and experiment station personnel, soil conservation men, bankers and consultants

Croplife, with a publishing schedule every 168 hours, is reporting news to the industry while it's still news! A staff of 21 crack newsmen in key U.S. cities and backed by 100 special correspondents provides the stop-press coverage of the industry required by readers who make the command decisions.

Croplife's unique distribution plan permits advertising (1) on the national level to the manufacturing core of the industry, and (2) on the regional crop-area basis to the distribution segment of the market. Ask a Croplife representative to elaborate on this in terms of your product!

Your advertisement in Croplife will share the *impact* and *import* of Croplife as it reports weekly to the men who create action in the agricultural chemical field.

# Croplife ... for richer <sup>sales</sup> fields

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